A STUDY AND MEASUREMENT OF THE ATTRIBUTION OF SOCIAL CAUSALITY BY DELINQUENTS AND NON-DELINQUENTS.

Presented by

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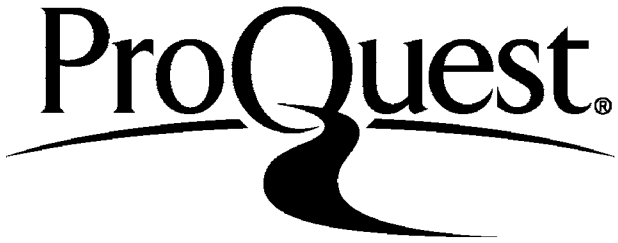

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Last but by no means least, my wife, Grace, must come in for immense gratitude, for, it was her patience and affection that had made hard days refreshing.

What has been set down on these pages is the result of how I used the immensely generous help of other people. Accordingly, I, not they, must be considered the locus of all the deficiencies in the study.

I.E.E.

QUOTABLE QUOTES:

Edmund: "This is the excellent foppery of the world, that, when we are sick in fortune, often the surfeit of our own behaviour, make guilty of our own disasters the sun, the moon, and the stars; as if we were villains on necessity; fools of heavenly compulsion; knaves, thieves and treachers by spherical predominance; drunkards, liars, and adulterers by an enforc'd obedience of planetary influence; and all that we are evil in by a devine thrusting on. An admirable evasion of whore master man, to lay his goatish disposition to the charge of a star!"
(W. Shakespeare, King Lear, Act 1, Scene 2).

"It is the action of an uneducated person to reproach others for his own misfortune; of one starting his education to reproach himself; and of one completely educated to reproach neither others nor himself."
(Epictetus, Translated 1865, pp.377-378).

"Whether the failure blames others or himself is of central importance to the understanding of deviant conduct."
(R.A. Cloward & L.E. Ohlin, 1960, Delinquency and Opportunity. Glencoe Ill.: Free Press.)

ABSTRACT

This study was an investigation of the attribution of social causality by delinquents and non-delinquents. For this purpose, an attempt was made to construct a locus of control scale with item contents relevant to the limited life spaces of young people. The resulting Causal Attribution Scale for Children (C.A.S.C.) yielded validity and reliability indices good enough to encourage its use in the substantive investigation.

To test the similarity in developmental antecedents between internal control orientation and high self-esteem, the relationship between the attributional orientations of subjects and their self-esteem was investigated along with sex, age and social class differences in both constructs.

Delinquents were drawn from a remand home, a community home, and borstal institutions. Controls were drawn from various secondary schools, a technical college, and from a group of interviewees for university places.

Results showed that delinquents were both significantly more external in control orientation and lower in self-esteem than controls. Intra-delinquent group differences showed that remand home delinquents were significantly more external but non-significantly lower in self-esteem than all other groups of delinquents. Community home delinquents, though of the same age range as remand home delinquents, did well enough to be non-significantly different in both constructs from the much older borstal subjects. Suggestions that could yield administrative and therapeutic advantages were made.

While borstal boys were more internal in orientation and higher in self-esteem than borstal girls, female controls were more internal than male controls but lower in self-esteem than the latter. No social class differences were found. Delinquency played a major role vis a vis the differences found

in the study. In contrast to controls, delinquents were also significantly more inclined to positive reinforcements.

Locus of control correlated more highly with self-esteem for controls than for delinquents and more highly for males than for females, possibly reflecting the differential treatment by society of males, females, and young offenders.

It was concluded that, among other things, a refined C.A.S.C. with the T.S.C.S. could effectively aid the detection and management of problems of delinquency.

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CHAPTER I: INTRODUCTION

If scientists have decided to pay greater attention to the question 'how?' rather than the question 'why?', it is out of a newly acquired and necessary sense of modesty, not that they have given up the question 'why?' For, there seems to be a natural propensity in man, from his earliest period of cognitive awareness, to want to know why, and indeed, to ask why before asking how (cf. Piaget 1929, 1930a). It therefore remains the aim of man, the 'naive' and the empirical scientist, (Kelly 1955, Heider 1958), to get to know the 'why?' even if through the how.

SECTION A: Attribution

The question 'why?' is a question of cause, a question of attributing or assigning causes to their various sources or loci. Were it possible for men, as individuals or as groups, even when given all requisite information, to always attribute the right causes to the right loci, there would be little problem for science. But because causation, especially social causation, is not always accurately attributable, the difficult problem of sorting out the processes of attributing, that is, the how and the why of the attribution exercise itself, not to mention the immediate and or locus of that exercise, falls to the science of psychology. It appears that psychologists have generally attempted to tackle simultaneously the how and the why of both the processes in attribution and the choice of the locus by, the attributor.

Psychologists have treated the subject of attribution from different perspectives and have given names which, though scientifically elegant, tend to obscure, for many, the fundamental intent and meaning involved. Thus, terms or constructs like internal-external control of reinforcement, locus of control,

locus of causality, attribution of causality, are common. An examination of the definitions of these constructs will reveal a common core of meaning.

The definition and use of the internal-external control of reinforcement construct, draws heavily on Rotter's (1954, 1966) meaning of reinforcement as an event or reward which a person may perceive as under his own personal control (internal), or as controlled by forces outside of himself and occurring "independently of his own actions" - 1966 p.1, (external). Thus, Crandall and Lacey (1972) defined the construct as follows: "Internal control refers to the belief that the individual, rather than someone or something else in his environment causes the rewards and punishments which occur to him. External control on the other hand, describes the perception that those events occur at the whim or discretion of some agent other than the individual" pp.1123 and 1124. Phares et al. (1971) defined it even more succinctly: "Internal-external control of reinforcement--- refers to the extent to which one believes that reinforcements occur as a function of one's behaviour (internal) or a function of luck, chance, powerful others, etc." (external). p.285. It will be noticed that in these definitions, the terms rewards and punishments, are used synonymously with reinforcements. It is important to note further that Rotter et al. (1962) have, for operational reasons, taken care to emphasize the role of individual differences and of situational influences in the perception of reinforcements as internal or external, and this gives significance to the contrasts in such perceptions between chance determinants of reinforcements versus skill determinants, own characteristics versus characteristics of others, and own potential to control the environment versus the influence of others.

The construct 'locus of control' has been similarly defined as the degree to which a person sees events as internally

or externally controlled,cf. Bialer (1961), Cromwell et al. (1961); and Weiner et al. (1972) stated that "studies in the area of locus of control are concerned either with performance generated in situations that give rise to internal versus external ascriptions about causality or with the behavioural effects of individual differences in perceived internal versus external control of reinforcements." p.97. The construct'locus of causality' is used and understood in the same sense as 'locus of control', thus, Heider (1958) whose central proposition is that man perceives behaviour as being caused, the locus of causality being either in the perceiver or in the environment; also Thibaut and Riecken (1955), Pollak et al. (1974). The same core of meaning applies to the 'attribution of causality' construct - cf. Kelley (1967, 1973), Streufert and Streufert (1969), Fitch (1970), and Worchel et al. (1974). It is thus evident that whether one considers the issue as concerning locus of control (Rotter 1954, 1966) or as concerning locus of causality (Heider 1958) the meaning and the processes involved centre around attribution. From the point of view of actual behaviour Chance (1972) observed that when there is a strong belief that one can exert personal control over goal attainment, then, experience should modify future behaviour in a fashion consistent with the history of reinforcement. When a contrasting attitude of external control prevails, reinforcing outcomes may fail to alter behaviour in a consistent way. The latter form of behaviour is exemplified by a child who receives a good grade in a test but who may regard the good grade as a function of an especially easy test, a favour of the teacher, luck, etc., rather than his own activities and efforts. The influence of the grade on his future behaviour - amount of study for future tests, aspiration level, etc. - will differ with the degree of internality-externality of his attitude.

Two points are deducible from the definitions above. The

first recalls the purpose of bringing together in this introduction the outlined constructs, namely, the fact that these constructs all have a common core of meaning underlining the tendency of persons to attribute event outcomes to personal agencies, or to agencies outside of the person and thus more or less outside personal control, or even to a judicious combination of both internal and external agencies. The second point follows from the first, namely, that attribution of causality as used in the contexts quoted above, does not refer to the attribution of physical causality as empirically dealt with, for example, by Michotte (1963), and to a considerable extent by Piaget (1930a, 1969). The views of Michotte and Piaget in respect of causality as such will be elaborated on later. Attribution of causality is used here to refer to the attribution of social causality (cf. Thibaut and Riecken 1955) - an offshoot of social learning theory (Rotter 1954, 1966) which presupposes real, vicarious, imaginary, delusionary, etc., interactions of persons with their fellows and their environments. This type of causal attribution conceptually includes but also extends beyond the level of observation and report of the cause-effect relationship of physical objects (the centre of Michotte's study). It touches various levels of personal involvement in the production of the effect and/or the inference of the cause. It involves the imputation or assignment not only of actual causal acts but also of motives and intentions. This means that the attribution process, of necessity involves a fair degree of subjectivity. But this is also one of the aspects which makes it both interesting and necessary to study individual and group differences in attribution.

However, one must guard against the danger of confusing subjectivity with internality which is a most important concept in current research on causal attribution. For while subjectivity has non-empirical connotations of ego-biased judgements,

internality, though not exclusive of elements of subjectivity, refers to a more or less characteristic tendency, not merely to judge, but to explain event outcomes in ones world in a particular way. Rotter (1954) and Rotter et al. (1972) have dealt briefly with the problem of subjectivity in connection with their explanation of the key concept of expectancy. The internal-external control construct is built around reactions to EXPECTED rewards and punishments (reinforcements). Expectancy of reinforcement involves the probability of occurrence or non-occurrence of that reinforcement, and probability in turn involves subjectivity. Thus, as Rotter et al. (1972) maintain, "In social learning theory, the concept of expectancy is defined as a subjective probability, but this definition does not imply inaccessibility to objective measurement---. The subjective qualification is necessary because expectancies are determined not only by (1) probability calculated on the basis of one's past history of reinforcement (including special problems like recency, patterning of reinforcements, and the perceived nature of causal relation between behaviour and reinforcement) but also by (2) the generalization of expectancies from other related behaviour-reinforcement sequences." pp.13 and 24. In other words, a person's past experiences of reinforcements, rooted in the process of socialization, make the individual's probability estimates subjective, but because of the normative roots of those experiences traceable in his manner of generalizing his experiences (in an internal or external direction), calculation of his expectancies becomes feasible.

Moreover, internality as distinct from subjectivity, is often referred to as a belief - a belief in being realistic about expectancies - thus Rotter (1966), McGee and Crandall (1968), Phares et al. (1971). Internality in attribution refers to a strong personal tendency or response disposition to be reality-oriented, to perceive reality in depth in its obvious ramifications vis a vis the past, present and future, and to

accept it as it is defined by the values and norms of the society in which one finds himself. The same characteristics of internality are expressed by Rotter et al. (1972) to the effect that "the individual who has a strong belief that he can control his own destiny is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behaviour; (b) take steps to improve his environmental condition; (c) place greater value on skill or achievement reinforcements and be generally more concerned with his ability, particularly his failures; and (d) be resistive to subtle attempts to influence him." p.294. By contrast, a strong tendency to give way to subjectivity in attribution, a tendency to be ego-biased or egocentric, would, in attribution theory terms, suggest a belief in externality in as much as this implies a lack of grasp of reality in depth and in its obvious ramifications vis a vis the past, present and future, and an inability to accept or comprehend reality as this is defined by the values and norms of the society in which one finds himself. Nevertheless, caution is necessary in this matter, for, Rotter et al. (1962) went beyond the problem of subjectivity to suggest, in terms of personality dynamics, that the individuals at both extremes of the internal versus external control of reinforcement dimensions are essentially unrealistic, and that there are indications "that the people at either extreme of the reinforcement dimension may be maladjusted by most definitions---." p.477. This implies that realism in attribution of causality lies between the extremes on the continuum, if it is a continuum. Rotter et al's (1962) explanation suggests further that it is the manner in which internals and externals approach event outcomes, whether those outcomes be pleasant or unpleasant, that is crucial in revealing a person's enduring dispositional tendency towards internality or externality; thus, "As a general principle, ---, internal control refers to the perception of POSITIVE AND/

OR NEGATIVE (emphasis provided) events as being a consequence of one's own actions and thereby under personal control. Whereas external control refers to the perception of POSITIVE AND/OR NEGATIVE (emphasis provided) events as being unrelated to one's own behaviours in certain situations and therefore beyond personal control." p.499.

This manner of looking at internality not only leads to the suggestion of a relationship between internality-externality and cognitive abilities of some high order (cf. Bialer 1961; Crandall et al. 1962; Crandall et al. 1965; Eisenman and Platt 1968; McGee and Crandall 1968; Hunt and Hardt 1969; Hjelle 1970), but also to the suggestion of the dependence of internality-externality on cultural values and norms. In addition, Rotter (1966) outlined a number of possible correlates of internality-externality: e.g.

(a) McClelland et al's (1953) high-low achievement motivation, to the effect that people who are high on need for achievement, in all probability have some belief in their own ability or skill to determine the outcome of their efforts, cf. also Gurin et al. (1969), Crandall et al. (1965);

(b) Witkin et al's (1954) field dependence-independence construct, to the effect that people can be ordered on a continuum in some perception experiments describing whether they derive more of their cues from the field or from internal sources, cf. also Crandall and Sinkeldam (1964);

(c) The concept of 'ego-control' which seems to suggest not only the idea of emotional stability but also of confidence and ability to deal with reality; and,

(d) Riesman's (1950, 1954) concepts of 'inner', 'other' and 'tradition' directed social types; cf. also Shostrom (1966), Collins et al. (1973), Collins (1974).

Over and above the possible correlates mentioned by Rotter as above, the distinction can be explored between the internality-

externality construct and Rosenzweig's (1934) concepts of intro-extra - and impunitiveness. Some investigations have been made into the relationship between internality-externality and conformity-non-conformity - cf. Crowne and Liverant (1963) Johnson et al. (1968), Biondo and McDonald (1971), etc.: and between internal-external control and superstition - cf. Jahoda (1970). These will be touched on again in the review of literature, but it is obvious at this stage that a study of the attribution of social causality can and does raise many issues in its wake.

SUMMARY

In this section of the introduction, an effort has been made at outlining a number of issues pertinent to the process and behaviour of attributing social causality. Firstly, a strong urge exists in man to ask and to attempt to answer the question 'why?'. This urge forms the basis for a psychological study of the theoretical and empirical construct of causal attribution, a study made more interesting by the fact that causality in general and social causality in particular is difficult to attribute with accuracy. Secondly, although psychologists have used slightly different terms to describe the subject, their descriptions carry a core of meaning involving attribution, not least the attribution of event outcomes in an internal (skill/ability) or an external (chance/fate) direction. Thirdly the temptation to identify internality with subjectivity needs to be resisted especially in view of the fact that the former concept has describable empirical properties. Finally, internality-externality has explorable cognitive and personality correlates some of which have been mentioned and will receive further attention later.

SECTION B: Attribution, The Self - Concept & Delinquency

i) Attribution & the Self-Concept.

Since the attribution of social causality evolves from

attempts at making one's world meaningful by constructing, and perhaps reconstructing and 'schematizing' it to suit one's self and level of comprehension (Piaget 1929, Kelly 1955 , Heider, 1958) one's attributions are bound, as a consequence, to reflect, to some degree, one's self-concept and one's attitudes to both the self and the environment. Indeed de Charms (1968) regards the attribution of causality as presupposing and flowing from a feeling of one's self as an 'origin' or possible 'origin': "A man conceives of himself and of other human beings as loci of causality.---. In obtaining knowledge of other men, a man starts with a unique source of knowledge about himself. It is this source of knowledge that differentiates the study BY man OF man as a psychological being, as a subject, from the study BY man of anything else in the world." p.356. It seems reasonable, therefore, that a study of the attribution of social causality should include a formal study of the self-concept as a covariant of internality-externality. Rotter (1954) who conceptualized causal attribution in terms of social learning the effectiveness of which was contigent upon expectancies and reinforcements, observed that one of the major predictions of behaviour was the subject's expectancy regarding the outcome of his behaviour in a given situation, and that such expectancies incorporate the self concept. In other words, a person's conception of himself in a given situation is a major determinant of expected behaviour. This apparent interdependence of causal attribution and the self-concept makes the manner and type of attribution made by individuals and groups of immense research interest - all the more so if a group like that of delinquents is considered.

ii) Attribution, The Self-Concept & Delinquency.

In regard to delinquents, a number of questions are immediately prompted: How much self-knowledge does he possess who falls foul of societal values and norms?. Does his kind

of self-knowledge affect his actions and reactions (his behaviour) toward society? Does it induce him to exhibit a stronger tendency to regard society and/or his environment as the causal locus of events in his life space or vice versa? As de Charms (1965) would ask, does he feel like an 'origin' or like a 'pawn'? "A pawn is relatively powerless compared to an origin, and power relationships are most certainly entailed when inferences are made along the origin pawn dimension." de Charms (1965) p.242.

Delinquents are the experimental subjects for this study. They happen also to be a group of children and young people, who in very general terms, and by virtue of the label put on them, are regarded as falling short of societal norms and expectations. They are the sort of children who may feel like 'pawns' rather than 'origins' in society and may, therefore, be either unable or unwilling to abide by societal values and norms. Conformity or non-conformity is, however, relative as is the concept of delinquency. As Cortes and Gatti (1972) explained, unethical and criminalistic tendencies are present in everybody, to a greater or lesser extent, and situations and pressures leading to delinquent behaviour sooner or later will also be encountered by everybody. Yet students of delinquency, in line with conventional practice, are wont to dichotomize between delinquents and non-delinquents as if no shades of grey exist. Matza (1964) for one, is vigorously against this dichotomy. For operational reasons, however, the dichotomy may be unavoidable. Definitions of delinquency are of course affected by this dichotomous conception of the subject and because of its importance in this study, a number of definitions as well as the etiologic theories to which definitions are summaries will be examined. Relevant empirical data will form part of the review of literature in Chapter two.

(a) Problems of Defining Delinquency.

Since the dividing line between who is or is not delinquent and what delinquency is or is not is obscure, definitions are bound to be varied and controversial. Gibbens and Ahrenfeldt (1966) gave some indication of the sources of the differences when they stated that "There are profound cultural differences--- in the extent to which definitions (of delinquency) arise from emotion or the views of a ruling class, in the speed of evolution from one 'particular period' to another, in the attitudes adopted to 'punishment'." p.3. Operational definitions are, therefore, the order of the day.

In the British context in which the present study is done, Andry (1971), for instance, states that in his study "the term 'delinquent' was operationally defined as: 'anyone who had more than one recorded Court offence to his name, who was referred for psychological investigation to the Remand Home because of his recidivision, and who was not considered to be neurotic, psychotic or mentally defective." p.10.

Hirschi (1969) has thrown a great deal of helpful light on the issue by dividing definitions of delinquency into:

(a) Role definitions,

(b) Configurational or Syndrome definitions, and

(c) Typological definitions, although, again, each group of definitions reflects the operational dictate of its adherents. In regard to role definitions, Becker (1963) stated: "We are not so much interested in the person who commits a deviant act once as in the person who sustains a pattern of deviance over a long period of time, who makes of deviance a way of life, who organizes his identity around a pattern of deviant behaviour." p.30. And Cloward and Ohlin (1960) were "concerned with those forms of delinquent activity which result from the performance of social roles specifically provided and supported by delinquent subcultures." p.9. It is plain that role definitions

of delinquency and the delinquent, as the two above show, conveniently exclude the deviancy of normal and decent people, and this must make attitudes toward the regular delinquents' harsher and more inflexible. Toby (1960) is clear on this exclusion: "Whereas nearly everybody commits delinquent ACTS at sometime or other, only a very small proportion of the population assumes a delinquent role - with all that this implies on the deviant self-concept." cf. Hirschi (1969), p.49.

Configurational and syndrome definitions are more specific than role definitions and focus on the frequency and seriousness of a group of delinquent acts as well as on the statutory age limits of the persons concerned. Thus for the Gluecks (1950), "delinquency refers to repeated acts of a kind which when committed by persons beyond the statutory court age of sixteen are punishable as crimes---." p.13. And for Kvaraceus and Miller (1959), it is "behaviour by non-adults which violates specific legal norms of a particular societal institution with sufficient frequency and/or seriousness so as to provide a firm basis for legal action against the behaving individual or group." p.54. If, as syndrome definitions imply, delinquency is a social malady of which delinquent acts are symptoms, then everybody should be recognised as having a propensity towards delinquency in a variety of circumstances. Instead, syndrome definitions favour a dichotomy, created for the convenience of operating criminal laws, between 'delinquents' and'non-delinquents'. It is a deficiency shared to some extent by role definitions. It is perhaps a reflection of the fact that research must start with some definition; nontheless, it is a reinforcement of societal inflexibility which creates the vicious circle whereby people act according to the label that society puts on them and this in turn reinforces the attitude of labelling. Theoretically at least, this process can only harden attitudes on the sides of the labeller and the labelled,

thus making reorientation therapy difficult.

Typological definitions are more self-explanatory. They favour the idea that violations of norms are unidimensional. They seek to establish delinquent acts as species in the genus of deviant behaviours. Thus Cloward and Ohlin (1961) stated that "Delinquent acts are a special category of deviant acts." p.2, but then went on to say that the delinquent act "is defined by two essential elements: it is behaviour that violates basic norms of the society, and, when officially known, it evokes judgment by agents of criminal justice that such norms have been violated." p.3. Typological definitions have obvious advantages especially in the kinds of information they yield for the applied study of delinquency. As Cohen (1956) pointed out, "with such information at our disposal we can construct typologies and other classificatory schemes which will enable us better to describe variations in our data and relate these variations to variations in personal characteristics, life histories, and age, sex, ethnic, social class and other role positions." p.173. However, typological, like syndrome definitions, tend to restrict delinquent acts to those known and acted upon by officialdom, and to leave the determination of who or what is delinquent to official discretion. This trend cannot but be a limitation on the objectivity of research on delinquency.

The three types of definition share some theoretical and empirical problems in common. However, together, these varied definitions give a broad idea of the meanings of delinquency and the delinquent, and of the relativity in the behaviours the terms are supposed to convey. A single universally acceptable definition covering legal, social and personal aspects of the problem may, probably, never be reached, and, in a way, this doesn't appear to be essential for the advancement of research in the area.

The present study, without endorsing any particular

definition or type of definition of delinquency, the delinquent, delinquent acts or deviant behaviour, is concerned with the causal attributional tendencies of those young people who are adjudicated and institutionalized as delinquents or problem children. That delinquent behaviours are learned is incontrovertible hence the interest in examining the attitudes and belief orientations of delinquents in the context of a social learning theory construct - internal-external locus of reinforcement control. A glimpse at etiologic theories of delinquency is, therefore, a necessary complement to a study of delinquency in the light of a social learning theory construct.

(b) Etiologic Theories of Delinquency.

Etiologic theories of delinquency have evolved over the years into three distinctive approaches - sociogenic, psychogenic and biopsychosociogenic - each emerging as a reaction to the inadequencies and disciplinary insularity of the other/s. Each of the three approaches will now be examined very briefly.

Sociogenic Approaches.

By virtue of the probable earlier entry of the subject of delinquency into sociology, sociogenic theories are the most numerous. Only a few can be mentioned in this context, not only for reason of space but also because the ideas in many of them evolved from and are inclusive of previous ones.

Probably the most prominent and popular sociogenic theory is Sutherland's (1970) theory of Differential Association which emphasizes the diversity of cultures within a community and which rejects the pathological conception of the criminal. In essence, the theory states that criminal behaviour is transmitted and learned in cultural contexts in which excessive emphasis is layed on definitions favorable to violations of the law as against definitions unfavorable to violations of the law. Patterns of criminal behaviour are acquired by a learning process similar to that by which patterns of lawful behaviour are

acquired. The theory is called differential because the content of what is learned in association with criminal behaviour differs from the content of what is learned in association with anti-criminal behaviour patterns. The following nine propositions illustrate an analysis of the steps by which a person comes to be engaged in criminal behaviour.

1. Criminal behaviour is learned.
2. Criminal behaviour is learned in inter-action with other persons in a process of communication.
3. The principal part of the learning of criminal behaviour occurs within intimate personal groups.
4. When criminal behaviour is learned, the learning includes (a) techniques of committing the crime, which are sometimes very complicated, sometimes very simple; (b) the specific direction of motives, drives, rationalizations, and attitudes.
5. The specific direction of motives and drives is learned from definitions of the legal code as favorable or unfavorable.
6. A person becomes delinquent because of an excess of definitions favorable to violations of law over definitions unfavorable to violations of law.
7. Differential associations may vary in frequency, duration, priority, and intensity.
8. The process of learning criminal behaviour by association with criminal and anti-criminal patterns involves all of the mechanisms that are involved in all other learning.
9. While criminal behaviour is an expression of general needs and values, it is not explained by those general needs and values, since non criminal behaviour is an expression of the same needs and values (Sutherland and Cressey, 1970, pp.75 - 76).

Although Sutherland has mentioned many psychological factors among the propositions, he, however, denies that delinquent behaviour can be explained along the lines of those psychological

factors. The main criticism of his theory is that it is insular in regarding delinquency as entirely sociogenic. Differential association is regarded as the necessary and sufficient cause of a person's entry into the system of criminal behaviour. Short (1960) has criticized its failure to generate testable propositions, and even Cressey (1964), its principal apologist has had difficulty in applying the theory in research. Nevertheless, it does not deserve the blanket comdemnation issued by Cortes and Gatti (1972) who described it as superficial, useless, tautological, invalid and against the facts, since Sutherland did recognise and did emphasize learned aspects of criminal behaviour - a contribution which cannot be regarded as superficial or useless.

Another popular sociogenic theory is Merton's (1964) anomie theory. In brief, Merton proposes that anomie grows out of a contradiction between goals highly valued and vigorously striven for in a culture, and the means which the culture provides for achieving those goals. The result is pressure towards a breakdown of the methods of adhering to the legal and social norms for reaching the goals. This is why the alternative name of strain theory is given to Merton's anomie theory. From this point of view, it is motivational and to that extent psychogenic. In situations where the discrepancy between goals and means is widest a state of anomie prevails and individuals adopt deviant means to the goals.

Although Merton's theory is accepted by many it cannot explain all features of delinquency. For instance, it does not explain why, as Glueck and Glueck (1968) found, the majority of deprived people in deprived environments do not resort to illegitimate means of reaching their goals, nor why indeed others with legitimate means within their grasp, resort to illegitimate means.

A third sociogenic theory is that of delinquent subcultures

of which there are radically different forms. The three representative forms outlined here are advocated by the four authors, Cohen (1955), Cloward and Ohlin (1960) and Matza (1964). Cohen (1955) contended that the existing theories, for instance, the cultural transmission theory, social-disorganisation theory, culture-conflict theory, psychogenic and the illicit means theories, had failed to give adequate theoretical explanations of certain crucial features of the delinquent subculture. These theories tended to take the existence of a delinquent subculture for granted and regarded the culture as taken over by the child. Cohen set out to explain the existence, content, distribution and persistence of the sub-culture as well as the phenomenon to which the subculture is a response. The delinquent subculture is non-utilitarian, malicious, negativistic, versatile, hedonistic and thus with little concern for long-term goals, autonomous and intolerant of restraint except through the informal controls exerted from within the delinquent group itself. It is essentially anti middle-class and the above characteristics are reactions formed against the socially induced stresses inflicted on working-class children by a social class system maintained by the middle-class. Thus, "The hallmark of the delinquent subculture is the explicit and wholesale repudiation of middle-class standards and the adoption of their very antithesis" p.132. The subculture emerges as a result of initial ineffective interaction between actors with similar adjustment problems. However, through subsequent anxiety-ridden exploratory gestures and eventual conversion to the need for mutual and joint explorations of solutions to common problems, group standards emerge giving status to the sub-culture. The problem with Cohen's theory is that it is so insular that it cannot account adequately for delinquent behaviour which is not subsumed by a subculture. By stressing that delinquency is a reaction of the working-class to middle-

class values, it automatically leaves out middle-class delinquency.

Cloward and Ohlin (1960) on their part, tried to trace the development of those delinquent rules of conduct which require observance in the commission of delinquent acts. They sought, moreover, to account for those distinctive contents of various systems of delinquent norms which provide for adaptive delinquent solutions to problems of adjustment. Theirs is a subcultural theory of differential opportunity - criminal subcultures are a response to collective problems of persons who lack access to legitimate opportunities for success. The mobster is the cultural hero of the deprived youth and symbolizes his opportunity for success and recognition. Thus, "A delinquent subculture is one in which certain forms of delinquent activity are essential requirements for the performance of the dominant roles supported by the subculture." p.7.

Individual delinquent acts committed by both working and middle-class children are transitory, need not be sanctioned by peers and are easily containable. Subcultures, on the other hand, may be of specialist kinds, like the criminal subculture for theft, the conflict subculture for violence, the retreatist subculture for consumatory experience like drugs and alcohol, etc. Elements that are essential for any delinquent subculture are the prescriptions, norms or rules that define the activities of an initiated member.

In an effort to remedy the main defect in the theory of Cohen (1955), Cloward and Ohlin sought to explain individual delinquent acts committed by working - and middle-class youths outside the subculture, but ended up by regarding such acts as transitory.

Matza (1964) felt that some criminologists had tended toward a distorted and misleading image of the delinquent as being radically different from the law abiding. These

criminologists rested their explanations on the differential constraints experienced by the delinquent and the non-delinquent in their correspondingly different circumstances. In the wake of this concentration on dichotomies, features like the frequency of reform with maturation, and the frequency of conformity to both conventional and nonconventional norms by delinquents, have been overlooked. In place of these theories, Matza posited for the delinquent a 'drift' subculture in which the delinquent is not committed to either of the dichotomous (delinquent vs. nondelinquent) sets of values. It may be said parenthetically, that Matza's idea of delinquents sharing the values and ideals of the law-abiding finds support in a study done in Britain by Siegel et al. (1973). The study suggested the existence of a delinquent subculture which values highly many conventional ideals, practices, and institutions, though not so highly as do nondelinquents. Those values include the law, saving money, and education.

For Matza, drift is motion guided gently by underlying influences - emphasis is on the guidance being gentle rather than constraining. It may be initiated or deflected by events. The process is a gradual movement initially unperceived by the actor, but capable of being deflected into a delinquent path or vice versa. Accordingly, a theory of delinquency should be a description of the conditions that make a drift into a delinquent path possible or probable, rather than a specification of invariant conditions. There is therefore a subculture of delinquency but not a delinquent subculture. The former is a subculture in which the commission of delinquent acts is common knowledge among a group of juveniles as distinct from lone acts in which the actors involved have no knowledge of each others activities. The norms in a subculture of delinquency are such as allow alternative paths to a goal; delinquent means are neither demanded nor preferred but simply found to be

feasible.

A disagreement with Matza's (1964) and Siegel's (1973) view may be found in Hirschi's (1971) social control theory of delinquency in which he sees in the delinquent a person relatively free of the intimate attachments, the aspirations and moral beliefs that bind most people to a life within the law. The delinquent is not a foreigner to the laws of society, however, but appears to deliberately opt for the alternative. The reason for choosing the alternative is to be found in the absence of social control in differing proportions at differing levels of interaction. A more elaborate critique of the subcultural theories of Cohen (1955), Cloward and Ohlin (1960) and Matza (1964) is given by Ramana (1972), but enough has been said here to show that while subcultural theories give impressive explanations of the development and operation of delinquent subcultures, they cannot explain as impressively delinquent behaviour outside the subcultures. They are of course completely silent on psychogenic factors to which attention is now turned.

Psychogenic Approaches

Psychogenic theorists are psychological, psychiatric and psychoanalytic in structure. But just as sociogenic theorists have been accused of over-emphasizing social factors in the etiology of delinquency, psychogenic theorists have been accused of overstressing personality characteristics and pathological features of the etiology of delinquency.

Regarding psychological theories, abundant evidence exists to show that there are numerous personality characteristics which set delinquents apart from nondelinquents. Quay (1965) gives a lengthy review of such evidence. But how those characteristics are etiological, remains an open question. Moreover, it would be inaccurate to assume that such characteristics, in their undesirable aspects, are the exclusive

properties of the delinquent. The differences in the intensity of expression of those characteristics must be viewed in the wider contexts of social and personal circumstances (including genetic circumstances) of each individual.

Eysenck (1964d) presented a theory which relies on modern learning theory for its foundations and on experimental work in conditioning for its details. In the first place, he has evidence to show that personality is related to conditioning, and then he gives a descriptive framework of personality in terms of extraversion-introversion and neuroticism-stability, and provides empirical evidence to show, not only that extraverts and introverts condition differently, but also that psychopaths and psychopathic criminals belong in that part of the framework which combines high extraversion with high emotionality. Heredity is also found to play a rather large part in the behaviour of the criminal but Eysenck observes that it is insufficient to ascribe criminal behaviour to hereditary causes alone. Thus, having assembled data about learning and conditioning, about how personality types condition differently, and about the interaction of heredity, learning and personality, Eysenck settled on the theory that criminality results from the conditioning of the conscience: "--- it is conscience which is in the main, instrumental in making us behave in a moral and socially acceptable manner; that this conscience is the combination and culmination of a long process of conditioning; and that failure on the part of the person to become conditioned is likely to be a prominent cause in his running a-foul of the law and of the social mores generally." p.130.

The empirical background of Eysenck's theory helps to make it more balanced than most, at least from a psychological point of view, and leaves the way open for the multidisciplinary approach to the study of delinquency that may be the trend for the future. So, while recognising the immense importance of

psychological factors in the etiology of delinquency, it would be insular to regard them as the only factors in causation. Advantage ought, however, to be taken of the fact that psychology is social, biological and empirically based.

The second strain of psychogenic theories is psychiatric in emphasis. While psychological studies concentrate on delineating those personality factors that distinguish delinquents from nondelinquents and the correlative social factors that enhance the development of those personality factors, psychiatric studies concentrate on the pathological aspects of personality. The theme is that the crucial factors concerning crime emanate from personality disturbances. Delinquent behaviour is a response to such disturbances variously described as maladjustment, neuroticism, psychoticism, emotionality etc. Eysenck (1964d, 1967), for instance, draws from this tradition to some extent, apart that is, from his psychological orientation, even though he (1964d) prefers a flexible dimensional system of classification which he finds more in tune with the personality characteristics of both the normal and the abnormal, to the categorical, rigid systems used by psychiatrists.

A more strongly psychiatric approach than Eysenck's, is traceable in Gibbens et al. (1963) and earlier still in Aichhorn (1955). Aichhorn suggested that there must be something in the child which the environment brings out in the form of delinquency, thus implying that a specific kind of pathology is typical of every delinquent. This implication was countered by Bromberg (1965) who found that out of nearly 10,000 felons, only 17.7% could be described as having some kind of personality pathology. This finding is reinforced by the view of Gibbons (1970) that "Most juvenile offenders are relatively normal youths in terms of personality structure, in that they do not exhibit aberrant motives, deep-seated psychological tensions, or other marks of psychological disturbances." p.98.

If, as the evidence from Bromberg (1965) and Gibbons (1970) shows, most delinquents have no personality disorders as such, psychiatric theories cannot adequately explain delinquency. In what must be a multi-caused phenomenon, they point to yet more causal factors rather than the cause.

Closely related to psychological and psychiatric theories and strongly influencing both, are psychoanalytic theories, drawn largely from Freud's extensive work. In essence, psycho analytic theories centre around the proposition that all human behaviour (including delinquent behaviour) is motivated, in as much as motivation is based on psycho-biological drives or primitive instincts that are mostly unconscious in nature. Behaviour disorders of a functional kind, including delinquency, result from conflicts related to these drives. Delinquent behaviour is a form of neurosis. As Feldman (1969) described it, "--- the basic etiological formula of psycho-analytic criminology--- (is) --- that criminality is undertaken as a means of maintaining psychic balance or as an effort to rectify a psychic balance which has been disrupted." p.346.

A leading exponent of the psycho-analytic point of view is Glover (1960) who believes that the delinquent suffers from a compulsive need for punishment and that this need "--- is the key to all problems of delinquency---." p.302. Other psycho-analytic views incorporate more needs than the need for punishment and also make use of Freudian defense mechanisms. Thus delinquency is regarded as a response to the frustrated need for security, recognition, acceptance, adequacy, status, and self-assertion (cf. Merton, 1968). It is also regarded as a displaced form of an otherwise natural activity.

A major contribution of psycho-analytic theories lies in their stress on the point that delinquent behaviour is a form of self-expression. However, as Feldman (1969) concluded, psycho-analytic criminology has not taken "sufficient

cognizance of the fact that the criminal does not spontaneously invent patterns of criminality. Criminal behaviour---- is a social phenomenon, and a learning process has, therefore, to intervene between the personality of the individual and his criminal actions." p.441.

A theory that links the sociogenic and psychogenic approaches and points a way to a biopsychosociogenic approach is Mizushima's (1973) psycho-social theory of delinquency. It is a theory with emphasis on the clinical combination of emotional and cultural factors. He uses "rejection of positive interpersonal ties with socialized persons", p.265, as a central concept. On the social side he contends that an original incident of delinquent behaviour may occur for any of several reasons. A pattern of consistent delinquent behaviour results if socialized people reject or condemn the original act, since such rejection incites further antisocial behaviour, causing further rejection, thus creating a vicious circle. On the psychological side he contends that the main mechanisms used by the delinquent individual, a mechanism which surfaces in the original antisocial act, should be classified so as to reach a common factor present in most delinquents. Etiologically such a factor is one that combines the dualistic mechanisms of emotional disorder and acculturation. Biological and environmental background factors should also be taken into account. An integration of the factors involved in these approaches for clinical purposes, should enable us to "understand the total and unique picture of each delinquent individual." p.260. The effort to isolate a factor/s common to every kind of delinquent is praiseworthy but rather ambitious on Mizushima's part. Since neither he nor anybody else so far has been able to say which factor precedes and/or presages the other, an attempt at isolating a common factor means initiating a vicious circle of "which factor came first." Clinical work may benefit more

from using those factors applicable to individual cases.

Biopsychosociogenic Approaches

In their "Psychiatric Studies of Borstal Lads" in Britain, Gibbens et al (1963) found that mesomorpha more than other somatotypes formed the majority of delinquents. But because their sample of 58 was considered small, Gibbens et al. preferred to present their finding in the form of propositions, thus: "Predominantly mesomorphic youths, with performance ability higher than their verbal ability, make up the majority of delinquents, and become delinquent more as an obvious and to them, straight forward, reaction to the demands of society than to particular neurotogenic circumstances. Particularly is this so of mesomorphs with poor motor control, who do not shine at sports or boxing; whereas high control mesomorphs become athletes and physical instructors, low control ones may become delinquents. The causes of the low control are unknown and complex, embracing hereditary endowment, effects of early motor and other training or later environment. Intensive investigation of possible cause is needed, since if we could increase or prevent deterioration of skill and control in the motor tasks for which physique should clearly fit these youths, the outlook for prevention and therapy would be brighter." pp.183 - 184.

At least partially, the propositions of Gibbens et al. can be found in Glueck and Glueck (1968), Eysenck (1967), and especially Cortes and Gatti (1972), whose study is regarded here as representative of the biopsychosociogenic point of view . Many researchers would agree with Cortes and Gatti (1972) that it is difficult and dangerous to designate the causes of delinquency since research has so far done no more than discover associations between specific personal and/or social variables and delinquent behaviours. Nevertheless, from these associations limited inferences are possible. And, the inference regarded by Cortes and Gatti as the core of the etiology of delinquency

is that all individuals possessing a strong id in the area of aggression and a poorly developed ego are, in fact, predelinquent. "Or, to use a slightly different terminology, predelinquents are those individuals high in expressive forces and very low in restraining controls" (Cortes and Gatti, p.209). Whether or not such persons become delinquent depends on other factors, such as, opportunity, incentive, unhealthy companionships, different pressures, or frustrations.

Cortes and Gatti made the contribution of physique or constitution an integral part of their theory. So, along with Gibbens et al. (1963), they made a constructive revival of bio-constitutional theories. It showed that the scorn poured on Sheldon and other constitutionalists was because of undue emphasis on somatotyping. It is now realized that the reaction to constitutionalism which resulted in environmentalism could only point out partial solutions to psychological problems. Environmental factors, for instance, do not constitute the sole cause of delinquency. Cortes and Gatti aim at some balance: "Biology and culture, the internal and the external environment of the organism, values and structures, constitution and religiosity, in sum, different aspects of nurture play a role in the development and formation of personality as well as in the deviations and disorders of character" p.8. After an extensive review of previous studies of somatotypes and after an application of their own empirical methods, Cortes and Gatti proposed "that the factors and/or conditions that appear to be closest to the cause of delinquency are FAMILY DISRUPTION, PARTICULARLY WHEN THE CHILDREN ARE MESOMORPHIC." p.210. Although the "mesomorphic" aspect of the Cortes and Gatti deductions might, at first, still raise many eyebrows, there does appear to be empirical backing for it. For instance, on self-description questionaires, mesomorphs more often described themselves as aggressive, active, adventurous, and impulsive.

"Rather than a cause, mesomorphy is probably a required condition for aggressive behaviour." p.350.

The environmental and constitutional aspects of their deductions are considered to be critical and decisive as well as necessary and sufficient conditions for the occurrence of violent and antisocial behaviour. For, "By creating a defective superego and no real bonds to society, FAMILY DISRUPTION lowers the individual's resistance to withstand the pressures of his aggressive tendencies in the presence of frustrations, incentives, and opportunities, and increases individual receptivity toward criminalistic patterns. On the other hand, by being intimately connected with potential aggression and low conditionability, MESOMORPHY (the energetic, masculine component of physique) increases the person's chances of reacting aggressively and antisocially toward those same incentives and opportunities." pp.210 - 211. The postulate is, therefore, that of a negative imbalance of too much potential aggressivity and too little internalization of socially accepted norms and controls.

Of immense interest is the position of female delinquents vis a vis mesomorphy. Here Cortes and Gatti deduced from Sheldon (1954) and Parnell (1958), that women are not as mesomorphic as men. "Consequently, by our (Cortes and Gatti's 1972) theory, the proportion of aggressive and violent crimes committed by female offenders should not be as high as that of male offenders". p.220. Confirmation of this was found in Lunden (1964) and Hoover (1970). However, since mesomorphic delinquents are often found to be aggressively criminal, mesomorpho-female delinquents should be more aggressively criminal than a comparable group of other women. Support for this is to be found in a British study by Epps and Parnell (1952). This means also that more female delinquents should come from disrupted homes than do male delinquents. Support for

this is given by Monahan (1957), Gibbons (1970), and Landau (1975), among others. However, as Glueck and Glueck (1968) have cautioned, mesomorphy should not be thought of as being inevitably related to delinquency - it should not form another basis for labelling.

Glueck and Glueck (1968) differed from other etiologic theorists in at least one respect, namely, in the use of a partially inductive method of enquiry which consisted of a follow-up study of the boyhood to manhood of a group of delinquents and non-delinquents in respect of socially significant activities and achievements. Biosocio-culturally, the study also related the early and later behaviours of both groups of subjects to what Glueck and Glueck termed the "biological and cultural legacy of the parents." It is from these parental-legacy-child-behaviour relationships that the Gluecks derived their etiologic theory. Their empirical analysis "has indicated beyond reasonable doubt that, in all of life's activities, ----- the men who as boys comprised our sample of juvenile delinquents have continued on a path markedly DIVERGENT from those who as juveniles had been included in the control group of non-delinquents." p.169. The Gluecks are strengthened in their induction by the fact that both groups of subjects came from the same socioeconomic background - very poor and working-class. They are equally emphatic about their induced etiologic factors:" ------ the MASS impact of the external societal environment, or the general culture, is less significant in generating delinquency and extending it into criminal recidivism than are the biologic endowments of the individual and the parental influences of the formative years of early childhood." p.170.

A recent study by Blakeley et al. (1974) supports the conclusion of the Gluecks regarding parental influences. Blakeley et al. found, in a study of demographic and family

interaction characteristics of delinquents and controls, that deviant patterns of family interaction were noted more frequently in the delinquent sample than in the controls. Differences were noted on variables such as paternal warmth, inconsistent discipline, family cohesiveness, orderly living routine, and poor communication. Blakeley et al. then suggested the grouping of delinquents into three classes: (a) those from normal homes, (b) those from deviant homes, and (c) the emotionally disturbed.

It appears, therefore, that external cultural factors are not as determinative of delinquency and nondelinquency as do the quality of the parents and children and the culture of the home. The Gluecks emphasized the biologico-social point in a footnote by saying "The parents are not merely conveyors of the surrounding general culture, but also its selective filters and modifiers." p.180. What has come out most strongly from Cortes and Gatti (1972) and Glueck and Glueck (1968) is that delinquency can neither be explained in terms of social factors alone, nor in terms of psychological and biological factors alone, but in terms of a combination of those factors - biopsychosocial.

SUMMARY

In this second section of the introduction, an attempt has been made at showing the link between the main variables operative in this study - namely, attribution, the self-concept and delinquency. It has been explained that, in as much as attribution involves an effort at making meaning out of one's world, the conception of one's self, which is a part of that world, is reflected in one's attribution. This being so, the attributions by the delinquent involve his self-concept. But because delinquents are the experimental subjects of this study, and because a lot of controversy rages over the definition and etiology of delinquency, consideration of the major features

of definitions and etiologic theories was regarded as of importance. As might be expected, definitions were found to be operational in structure, and to reflect the disciplinary and theoretical inclinations of their authors. It was concluded that no single definition can encompass the complex nature of delinquency, but that, individually, each definition contributes, from some angle, towards better understanding of the subject. The present study subscribes to none of the definitions surveyed, but regards as worth studying the attributions of those young people adjudicated and institutionalized as delinquents by society.

Definitions are themselves microcosms of the etiologic approaches of their authors. Three major approaches - sociogenic, psychogenic and biopsychosociogenic - have been briefly examined. Each approach has had its own period of historical dominance, and each has developed as a reaction to the inadequacies and disciplinary insularity of the one or ones before it. However, with more and more empirical evidence becoming available, some consensus is emerging to show that one cannot talk of the cause of delinquency, but of factors in the causation of delinquency, the factors being part biologico-constitutional and part socio-behavioural, the weight of each factor varying in the case of each individual delinquent. Thus, neither environmental determinism alone nor genetic determinism alone can explain delinquency. Whatever the combination of determinants, learning lies at the heart of the matter, and prospects for therapy look bright from a learning theory point of view.

CHAPTER II: REVIEW OF LITERATURE

In this chapter, an effort has been made to divide the review into parts which are thought to be necessary for, and relevant to a study of the subject of the attribution of causality by groups of developing individuals in general, and delinquents in particular.

Accordingly, the first section, entitled "Theories and Processes," attempts to place the attribution of causality in a semi-historical context by examining the theories of causality of a number of authors who have influenced and continue to influence research in the area of causal attribution. As a complement to this part of the review, a tentative analytic scheme of some derivatives from causal attribution constructs is added.

Next, findings on the self-concept in relation to internal-external locus of control, the principal attribution construct used here, as well as findings on two relevant personality correlates of the construct, are examined. Other parts of the review examine, in order, social and cognitive foundations of internal-external locus of control; internal-external locus of control in the context of delinquency and related pathologies; social class and ethnic group differences in internal-external locus of control; sex differences in internal-external locus of control; and finally, internal-external locus of control scales in use.

SECTION A: Theories and Processes

Psychological work on causality - physical and social - has derived a great deal of impetus from its more recent philosophical antecedents. Thus psychologists like Piaget

(1925a, 1930a, 1969) and Michotte (1963) have studied closely the psychological implications and influence of the theories of Hume (1777) and Maine de Biran (1942) on the perception and/or experience of causality.

HUME

Adopting an epistemological approach, Hume sought originally to discover what could justify the characters of necessity and universality which cause-effect relations seemed to possess, and which led enquirers into a regression ad infinitum in the search for causes. His search led him to the question - begging assertion that the origin of the notion of causality is, simply, previous experience. For him, the notion of causality as a necessary connection is derived from the regularity of the succession of events; it is based entirely on anticipation, that is, on the expectation that when one event occurs, another will follow. Thus, in his "Enquiry concerning Human Understanding" Hume explained that "--- after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe that it will exist. This connection therefore which we FEEL in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connection." p.75. As a consequence, Hume continued, "--- we may define a cause to be an object, followed by another, and where all the objects similar to the first are followed by objects similar to the second. Or in other words where, if the first object had not been, the second never had existed" p.76. Thus, for Hume, it is contiguity that brings about the evolution of the notion of causality - a link which, over time, becomes a habit such that, without being aware of how the first event affects the second, we substitute a causal connection between the two. The problem is that this connection is unwarranted, and is,

therefore, not enough to explain how the idea of causality came about, nor can it explain how that idea came to assume the aura of universality.

A further problem with Hume's theory is that there is so much emphasis on contiguity that any two events that are spatially and temporally close, can stand in a cause-effect relation to one another. However, looked at from a psychological point of view, especially in relation to Piaget's (1925a, 1950a) theory, Hume's inference of the cause-effect relation from contiguity alone, corresponds with what happens at the sensori-motor/pre-operational transitional stage of infant development, when contiguity and juxtaposition are sufficient to explain cause-effect relations. But this is no more than a stage in the maturing skills involved in the search for the why of events in the life space - a very early stage at that. Hume's theory may also be valid in the case of some subnormals and the highly pathological, but not for all of mankind as his philosophical generalization led him to assert. (It is probable that his theory would apply in the case of some forms of superstition). Michotte (1963) observed that Hume's errors originated from the fact that he believed in the existence of isolated successive events rather than in the existence of causal impressions (created by the interaction of physical objects). However, the tendency of people, under the pressure of situationally relevant needs, to simplify judgments and uphold uncritical conclusions may appear to support Hume's assertion. Michotte did observe further that had Hume performed experiments, he would no doubt have attributed the origin of the popular idea of causality to the causal impression and not to habit and expectation. Nonetheless, the instigative effects of Hume's ideas of causality cannot be denied.

MAINE de BIRAN

The philosopher Maine de Biran (1942) saw the notion of causality as resulting from the experience of our own voluntary bodily movement. This direct experience of our own causality was, for Biran the "primary fact" that provided the foundation for all psychology and all philosophy. This internal feeling was a"simple fundamental relation that cannot be resolved in phenomenal terms, in which cause-effect, the subject and the act of performing, are indivisibly united in the same feeling or the same perception of effort (nisus). This effort has as its organ the muscles which obey the dictates of the will. It is from this original impression of effort that all ideas of force and cause derive." p.165. From the above quotation it becomes obvious that for Biran, voluntary movement is an immediately experienced act caused (internally) by the self and ending up as muscular sensations. It is from this experience alone that the idea of causality is derived. The feeling of causality so derived, is more than the recognition of certain habits of the past revived by the regularity of occurrence of two contiguous and external events, as Hume saw it.

Michotte (1963) saw Biran's approach to the subject of the origin of causality as being clearly introspectionist, and Biran's mistake as lying in the confusion of immanent activity with causality. The psychological value of Maine de Biran's theory lies in the fact that he linked voluntary action to events. This link was to be developed later by Piaget (1930a) into a psychogenetic theory of the conception of the notion of causality. Thus Piaget acknowledged that "The fact that the idea of force owes its existence to inner experience seems to be beyond dispute. To Maine de Biran belongs the merit of having stressed this origin." p.126. The child forms a causal association and comes to know of himself as a cause through the voluntary use of his body in the exploration of his

environment. It has to be emphasized, however, that the awareness of the child that his voluntary actions or bodily movements are a source of causality is a slow maturational process, unlike Maine de Biran's belief which appears to indicate that, from the start, the person is aware of his own volition in initiating bodily movements. This caution is also apparent in Piaget's (1930a) statement that "the idea of force --- is the result of internal experience, but not of an experience that is felt as internal from the first." p.130.

So, just as it escaped the ingenuity of Hume that the inference of cause-effect relations from contiguity is an early developmental phenomenon, it also escaped the ingenuity of Maine de Biran that the awareness of one's self and/or the organism-in-action as a causal origin, is a matter of degree, subject, moreover, to the psychological laws of human development. From their philosophical perspectives, they saw and speculated on the problem from the point of view of adult notions of causality. But it is obvious to the psychologist that the child's interaction with his physical and social environments, is the fabric of the evolution of the notion of causality and of the loci of causality. The disposition to attribute causality to the self, the environment or both, is the inevitable by-product of that interaction. However, the influence of Maine de Biran's work is noticeable in the works of contemporary psychologists, notably Piaget (1930a) and de Charms (1968).

An attempt to study the attribution of causality by delinquents implies the acknowledgment of two interdependent psychological facts, first, the psychogenetic nature of the perception of causality with all the natural and nurtural hurdles in the genetic process, and second, the consequent idiosyncratic elements of that perceptual phenomenon.

PIAGET and the Psychogenetic Approach

Piaget (1925a, 1930a) adopted a psychogenetic approach

to the study of acquisition of the notion and attribution of causality. He rejected the views of Hume in respect of the functions of habit in the formation of ideas of causality, but integrated the suggestion of attribution by contiguity into his theory of the very early stages of the development of the notion of causality. In the same way, he discarded Maine de Biran's suggestion of a unilateral and immanent function of the human organism in the acquisition of the notion of causality, but integrated into his work Biran's suggestion of the relative part played in causal association by voluntary bodily movements.

Piaget's study of causality, in a sense, spreads over all of his works. For instance, the study of "why" questions in his first book, and the study in his second book of the completion of "because" and "although" statements are, in part, studies of causal associations. Moreover, his study of animism and artificialism are as much studies of the child's notion of causality as they are of the childs conception of the world, for, in reality, the child's evolving mode of causal attribution pervades the entire length and breadth of his cognitive life. When a child bursts into ecstatic joy or lapses into distress out of frustration, it is because he is becoming aware, in stages, of what he can and cannot cause. Repetition of effort or cessation thereof, constitute processes of causal learning.

Piaget's investigation of causality can be divided into two large areas - the study of precausality and the study of causality proper. Precausality covers a period of causal attribution based on the confusion of psychological and physical causality in action. It dominates the sensori-motor stage when the primitive world of the child is undifferentiated in respect of things and the self. Gradually, the sense of self as distinct from the environment and activities within it, begins to emerge. Piaget (1930a) describes this differentiating

process as if the child emerges from a realm of utter undifferentiation into one in which attribution of causality to outside factors takes over, later to yield in turn to egocentric attribution. Thus, "Everything happens as though the child began by attributing forces to all outside bodies, and as though he only ended by finding in himself the 'I' that was the cause of his own force." p.128. But this "force becomes gradually withdrawn from external objects and confined within the ego." p.132. If internal-external locus of control is understood in the sense in which it is explained in the introduction above (Chapter I), the early type of attribution described by Piaget here will qualify as external attribution. This may actually be why the locus of control scale, as will be seen in later sections of this review, is so sensitive to age, with younger people tending to score in the external direction. But that is parenthetical. In "The Child's Construction of Reality", Piaget (1955) showed the continuation of the evolution in another context: "Assimilation and accommodation separate out to form increasingly complex systems ---. To the extent that this occurs, the causal nucleus - personal activity - is broken down into a series of centres by progressive objectification of causality." p. 316. At this stage, the child has acquired the sense of causing his own actions through volition (area of agreement with Biran), and of a will to perform an action before performing it. He is also able to observe and describe physical causality, that is, the causal action one object exercises on another through special contact. Again, by way of parenthesis, one may say that, provided socio-cognitive development is not handicapped, a tendency toward internal attribution in the sense in which internal locus of control is described above, is beginning to assert itself at this Piagetian stage of development.

In "The Mechanisms of Perception," Piaget (1969) put the

emphasis on physical causality but still employing his psychogenetic approach. Through this work, Piaget established a link between physical causality and social causality, thus confirming, in a way, the view of Heider (1958) that the process of predicting the physical environment does not differ in kind from the process of predicting the behaviour of other people. The linking of these two types of causality is one of the ways in which Piaget differs from Michotte (1963) who concentrated on the study of physical causality.

MICHOTTE

Michotte (1963) stated unequivocally that the principal subject-matter of his investigation was the perception of mechanical actions - the actions exerted by one body on another. In a forward to Michotte's (1963) work, Professor R.C. Oldfield gave the following appreciation: "---- Michotte uncovered the characteristics and conditions of a variety of types of perceptual event which in the less analytic mood of everyday life we lump together under the heading of 'Causal phenomena.' His cardinal finding, namely, that the impression of causality is dependent on specific and narrowly limited spatio-temporal features of the event observed, is clearly of fundamental importance. We do not, according to Michotte, see one billiard ball cause another to move either because we intuitively apprehend a fact of nature (according to Biran), or because past experience leads us to see the event in this fashion (according to Hume), but because the spatio-temporal organisation is such that it directly unleashes this impression in us. Alter the relevant variables by a small but measurable amount and the impression disappears." p.vii. In this, one can see Michotte's objection to Hume's view of contiguity or juxtaposition of detached pieces as the origin of the notion of causality. One can also see his objection to Maine de Biran's immanence and introspectionist or voluntary interventionist point of view.

Contrary to these and other philosophical and psychological points of view, Michotte "expressed the opinion that certain physical events give an immediate causal impression and that one can 'see' an object ACT on another object, PRODUCE in it certain changes, and modify it in one way or another." p.15.

For Michotte, therefore, the origin of the notion of causality lies in the impression which objects in interaction make upon the observing subject, an impression of causality epitomized by the 'Launching Effect' which a subject 'sees' when one moving rectangular object, A, sets another, B, in motion, such that A's motion is 'seen' as extending on to B and being partaken of by B; or by the 'Triggering Effect' when A's impact on B is 'seen' causing B to move at a faster pace than A's original motion. If, however, the movement of B is delayed for a brief period after A strikes it, the impression or perception of causality is lost. With these experiments, Michotte sought to prove his assumption that people immediately perceive causality. But it can be inferred from this assumption that what he proved in the end was that people have a pervasive tendency to use causal language in the description of events.

However, Michotte maintained that these types of impression are part of everyday experience in as much as we need to know, for instance, that things can be moved and are moved, and in as much as it is necessary to understand the influence that things exert on people by hurting them, resisting their efforts, confronting them with shapes and sizes that are easy or difficult to handle, etc. The most important feature of such events is that they imply functional relations between objects. These functional relations constitute the essential fabric of the phenomenal world, and are also important in enabling an external observer to understand the human and animal conduct which he sees. It is these relations which give the things around us their significance, since it is by coming to know what things do

that we learn what they are, and what they are for us is much more than their shape, size and colour; it is above all what they are capable of doing or what can be done with them that matters. Among these significant functional relations of things to one another, causal relations clearly play a very important part.

Michotte's theory is a cognitively impressive one and very few people quarrel with this aspect of his work. However, without denying that the perception of causality is a learned phenomenon, he placed no importance on the learning of perceptual responses. He appears to have eschewed Piaget's psychogenetic approach by failing to show the developmental differences in the reporting by his subjects of the 'causal impression', indeed, for Michotte, "subjects of all ages ---- have given similar descriptions." p.20. However, he did suggest in his concluding comments that "it would clearly be very interesting if experiments such as those described in this book could be tried out on children of different ages." p.255.

It is in respect of his experimental methods that Michotte came under the severest criticism. For instance, Joynson (1971) stated bluntly that "Michotte's account of his experiments on the perception of causality is incomplete and imprecise. There is considerable evidence, however, that subjective variables were very poorly controlled. It follows that little reliance can be placed on his conclusions.", (abstract) p.293. Not even Boyle (1972), Michotte's former laboratory pupil, could restore the experimental work to its former status which enabled it to have quite an impact on subsequent experimental work on causality. Boyle admitted first of all that "--- everything that Joynson says about Michotte's experimental method is justified." P.89. A major reason was that Michotte, like a master craftsman, expected no deviation from his vision of the phenomenon of perceptual causality. "If subjects failed to see the causal

effects that Michotte saw, they were considered not to know how to perceive.", Boyle (1972) p.89. As a consequence, Michotte had to press home the point in his hypothesis by 'blatant' use of the influence of suggestion. A second reason was that Michotte, operating in the Gestalt tradition, was more concerned with proving his point of view than with controlling his experiments.

Nevertheless, Michotte's contribution to the study of perceptual causality is still outstanding, for, in his cognitive theory, he not only steered a middle course between Hume's and Maine de Biran's, but also made, in the words of Oldfield (cf. Forward to Michotte 1963), an "exploratory attack on the perceptual mechanisms by which we become aware of and react to the external world in the way we do." p.x. From this point of view alone, Michottes work is relevant as a stimulus to the exploration of both physical and social causality.

HEIDER

Heider (1944, 1958) studied attribution of causality from a background of person perception theories. Collins and Martin (1973), in agreement with this assessment, observed that Heider and others who follow the person perception tradition, work from the central assumption that "A perceiver wants to know whether an event was caused by some attribute of the situation (an external attribution) or by some attribute of the actor (an internal attribution)". p.475. The initial impetus to this line of approach was given by Heider (1944) when he expounded the thesis that the principles involved in the studies of the processes of organisation of the perceptual field can be applied profitably to the perception of other persons and their behaviour, and that one of the features of the organisation of the social field is the attribution of a change to a perceptual unit. Accordingly, "when we have a disagreeable experience, or a pleasant one, we may locate its origin in another person, in

ourselves or in fate.", Heider (1944), p.358.

Later, Heider (1958) expanded his initial thesis and built on it a structure of the perception of causality in which the average man is seen in the course of attribution as acting like a scientist in an effort to find sufficient and necessary reasons for the occurrence of a particular form of behaviour. This average man of Heider's "naive psychology of action" perceives behaviour as caused, the causal locus lying either in the man or in the environment. This led to two further assumptions, first, that in order to adequately understand peoples' social behaviours, one must have a description of how they perceive and report their social world, and second, that people want to predict and control their environments to enable them anticipate the effect their behaviour will have on themselves and on their environments. The most important variables in the attribution are, therefore, the person and the environment, so that, for Heider, a perceived action outcome is a function of the effective force (ff) coming from the person, and of the effective force (ff) contributed by the environment. Thus:

Action outcome = f (ff person + ff environment).

In order to attribute an outcome to an internal or external cause, a person becomes engaged in a process of estimating the relative strengths of the personal and environmental forces. Herein must lie the greatest source of individual differences in attribution, for, estimation presupposes the state of the estimating organism, emotional and motivational factors, the amount of information available, the speed and accuracy of estimation, etc.

Heider then went on to account for these sources of variation in attribution by analysing the factors of CAN (ability) and TRYING (exertion) which are involved in the process of attribution. In the words of Heider (1958), "--- can refers to the relation between the power or ability of the

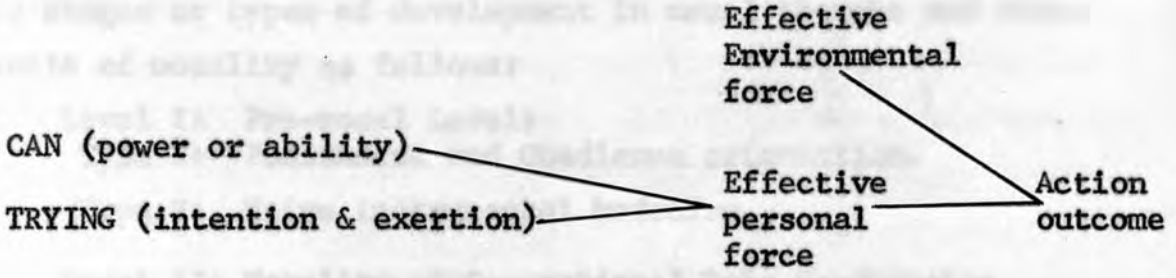
person and the strength of the environmental forces. The relationship might be further specified as:

Can = f (power, ability-difficulty of environmental factors)." p.86.

That is, can is a function of an individual's power or ability when the difficulties of the environment are taken out or are eliminable.

The perception of TRYING has two components - the intention of what a person wants to do, and the exertion of himself in the process of accomplishing it. Heider (1958) observed that in psychology these two components "are often thought of as the direction and strength of motivation. As expressed in trying, they make up the vectoral component of action." p.110. Trying is, therefore, the factor that propels and guides the action and gives it its purposeful character. This is the feature par excellence that distinguishes instigation by a person from other "causes" of events. It is highly central to the interpretation of action.

Heider's (1958) complete scheme for the attribution of causality is therefore as follows:



In sum:

Action outcome = f (CAN, TRYING, ENVIRONMENT).

Personal and impersonal causality which Heider went on to analyse, are aspects of TRYING, and depend on it for their meaning. Intention is the central factor in personal causality. As Heider (1958) put it, "what we have designated as personal

causality refers to instances in which p causes x intentionally. That is to say, the action is purposeful. --- But unless intention ties together cause-effect relations we do not have a case of true personal causality." p.100. Where effects involve persons but not intentions, they are "appropriately represented as cases of impersonal causality." p.101. Perceived personal causality is, therefore, a subset of internal causality while impersonal causality consists, not only of externally caused effects but also of unforeseen effects incidental to intended action.

Consideration of personal and impersonal causality led Heider to examine the attribution of responsibility in ways similar to Piaget's (1932) study of the development of moral judgment. Heider adopted the stages approach at this point by delineating five levels of the evolution of the attribution of responsibility. Unlike Piaget, however, Heider did not do or mention any empirical studies in regard to these levels or stages. It is not out of place to mention that subsequently, Kohlberg (1963) did empirical work on the development of children's orientation toward a moral order, albeit mainly with boys no younger than 10, 13 and 16 years of age. Kohlberg isolated six stages or types of development in moral thought and three levels of morality as follows:

Level I: Pre-moral Level:
Type 1: Punishment and Obedience orientation.
Type 2: Naive instrumental hedonism.

Level II: Morality of Conventional Role Conformity:
Type 3: Good-boy morality of maintaining good relations, approval of others.
Type 4: Authority maintaining morality.

Level III: Morality of self-accepted Moral Principles:
Type 5: Morality of Contract and democratically accepted laws.
Type 6: Morality of individual principles of conscience.

Kohlberg found that more mature modes of moral thought (types

4 - 6) increased from age 10 through 16; less mature modes (types 1 - 2) decreased with age. The hypothesis that attainment of each type of thought is the prerequisite to attainment of the next higher type was supported. However, Kohlberg found no support for Piaget's view that these stages are derived from heteronomous or mutual respect; nontheless, the evidence suggested the existence of a series of internally patterned or organised transformations of social concepts and attitudes, transformations which constitute a developmental process.

Kohlberg's stages show the progressive internalization of moral principles in a direction that incorporates an increasing number of parameters relating to the individual, society, and the interaction of both. A comparison of Kohlberg's stages and those of Heider (below), shows that the conceptual similarity between Heider and Kohlberg lies mainly in their adoption of the psychogenetic approach toward their studies of the attribution of responsibility and the development of children's orientation toward the moral order, respectively. There is no perfect overlap between the schemata developed by both authors. But their schemata carry important social, psychological and legal implications for evaluations of the behaviours of young people.

Heider's (1958) levels, although not empirically tested, facilitate, theoretically, the conceptualization of attributions in terms of personal and impersonal causality. Thus:

"At the most primitive level the concept (of responsibility) is a global one according to which a person is held responsible for each effect that is in any way connected with him or that seems in anyway to belong to him.-----

"At the next level anything that is caused by p is ascribed to him. Causation is understood in the sense that p was a necessary condition for the happening, even though he could not have foreseen the outcome however cautiously he had proceeded. Impersonal causation rather than personal causality----

characterizes the judgment of responsibility at this level.----

"Then comes the stage at which p is considered responsible, directly or indirectly, for any after-effect that he might have foreseen eventhough it was not a part of his own goal and therefore still not a part of the framework of personal causality.----

"Next, only what p intends is perceived as having its source in him. This corresponds to what Piaget (1932) has called subjective responsibility and pertains to actions whose structure may be described by personal causality.

"Finally, there is the stage at which even p's own motives are not entirely ascribed to him but are seen as having their source in the environment. We may say about an action of p's '--- he has been provoked.'--- The causal lines leading to the final outcome are still guided by p, and therefore the act fits into the structure of personal causality, but since the source of the motive is felt to be the coercion of the environment and not p himself, responsibility for the act is at least shared by the environment." pp. 113 - 114.

Thus, in Heider's words, "--- the issue of responsibility includes the problem of attribution of action. That is, it is important which of the several conditions of action - the intentions of the person, personal power factors, or environmental forces - is to be given primary weight for the action outcome. Once such attribution has been decided upon, the evaluation of responsibility is possible." p.114.

It has been stressed in the introduction to the present study that psychologists have given various terms to their studies of causal attribution even though attribution is of the essence of their studies. It has also been mentioned that the present study emphasizes the locus of control approach inherent in Rotter's (1954) social learning theory. Since Heider's (1958) interpersonal perception approach and Rotter's (1954) social learning approach are the dominant ones in

psychological studies of causal attribution, it is desirable that at this point, some of the common elements in both should be pointed out before Rotter's approach is explained more fully. For this, advantage is taken of Heider's stages or levels of responsibility attribution.

Firstly, by his delineation of stages, Heider (1958), like Piaget (1930a, 1932), Rotter (1954, 1966), and others (cf. eg. Section D below) recognises that reality orientation in causal attribution is heavily age-dependent. Keeping in mind the definition, by Rotter and others, of the internal-external locus of control construct shown in the introduction above, it follows that recognition by a person that ability (CAN) and exertion (TRYING) are necessary in the modification of event outcomes, identifies a person as to some extent internal in orientation.

Secondly, recognition of the reality of the complexity of the contributory sources of causal responsibility, as is evident in the later stages of Heider's stages delineation, also indicates that an individual is developing in internal orientation. It follows from this, as in the first instance, that non-realization or recognition of such complexity would make a person tend to attribute causality in an external direction.

Thirdly, the ability to distinguish personal from impersonal causality as Heider defines these (above) indicates that an individual's attributional tendency is developing in an internal direction. The reverse would make external orientation probable.

So, while the social learning theory approach with its internal-external control of reinforcement construct deals with generalized expectancy held about the efficacy of the individual's own behaviour in relation to his life space, the Heider interpersonal perception approach deals with generalized expectancy about the behaviour of persons as objects of perception-

objects with motives, intentions, abilities and effort within an environment. The main difference seems to lie in who makes the attribution and who reports it. In the locus of control model, the individual makes and reports his own attributions, whereas in the interpersonal perception model, an actor's part or presumed part in bringing about an event outcome is reported by an observer. Three fine examples of how the two models validate each other can be found in studies by Joe (1974), Gilmore and Minton (1974), and Lefcourt et al. (1975).

Finally, it may be observed that Heider's endorsement of the psychogenetic approach which is intertwined with socio-cognitive learning, demonstrates the importance he attached to individual differences in attribution. It allows for difficiencies in the organism, errors, misperceptions, egocentrism, and environmental and situational pressures in causal attribution. Overall, his theory is one of, if not the most thorough exposition of the subject of attribution cast in the mould of social perception rather than, say, in the mould of social learning to which attention is now turned.

ROTTER

As already indicated, it fell to Rotter (1954, 1966) to study and interprete the attribution of causality from a social learning theory point of view. His is a social learning theory because "--- it stresses the fact that the major or basic modes of behaving are learned in social situations and are inextricably fused with needs requiring for their satisfaction the mediation of other persons." (1954, p.84). The four operative concepts in this approach are: behaviour potential, expectancy, reinforcement value, and the psychological situation. Rotter's (1954, 1972) definitions of these basic concepts contain the seeds and manner of growth of behaviour acquisition as envisaged in his theory. Thus:

"Behaviour potential may be defined as the potentiality of any behaviours occurring in any given situation or situations as calculated in relation to a single reinforcement or set of

objects with motives, intentions, abilities and effort within an environment. The main difference seems to lie in who makes the attribution and who reports it. In the locus of control model, the individual makes and reports his own attributions, whereas in the interpersonal perception model, an actor's part or presumed part in bringing about an event outcome is reported by an observer. Three fine examples of how the two models validate each other can be found in studies by Joe (1974), Gilmore and Minton (1974), and Lefcourt et al. (1975).

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"Behaviour potential may be defined as the potentiality of any behaviours occurring in any given situation or situations as calculated in relation to a single reinforcement or set of reinforcements. (1954, p.105).

"Expectancy may be defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on his part in a specific situation or situations. Expectancy is systematically independent of the value or importance of the reinforcement." (1972, p.12).

"The reinforcement value of any one of a group of potential external reinforcements may be ideally defined as the degree of the person's preference for that reinforcement to occur if the possibilities of occurrence of all alternatives were equal." (1972, p.13)

And, regarding the psychological situation Rotter et al. (1972) stated: "Behaviour does not occur in a vacuum. A person is continuously reacting to aspects of his internal and external environment. Since he reacts selectively to many kinds of situation, internal and external simultaneously, in a way consistent with his unique experience and because the different aspects of his environment mutually affect each other, we choose to speak of the psychological situation rather than the stimulus." p.13.

Through his involvement in social situations, a person emerges with tendencies or "characteristic modes of behaving or of interpreting the world in which he lives." (1954, p.82). What the individual has learned to expect as the outcome or reinforcement of his behaviour is a function of the value of the reinforcement for the satisfaction of the needs of the self. There-in lies the link between the self and the environment enabling an interpretation of the world in which one lives to suit the adjustive needs of the self. It is also the framework for the belief in one's self, in one's skills, in one's ability to achieve, in one's ability to bend the environment in order to put it at one's service, or in more general terms, the framework for a belief in realism including the knowledge and acceptance of one's limitations. From Rotter (1966) it is

clear that the balance which a person strikes between these positive beliefs and their converse, is an indication of his socially learned disposition to attribute event outcomes or reinforcements to himself or to outside factors including chance and fate - thus internality-externality of attribution. To Rotter (1966) this disposition to react in terms of beliefs is a continuum evident in the statement that "the degree to which the individual perceives that the reward follows from, or is contingent upon, his own attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own reactions." p.1, is a determinant of reactions to events. Both Rotter and others (cf. subsequent sections) who have followed his learning theory approach to the study of causal attribution have in their lines of investigation, capitalized on these beliefs and their consequences in the contexts of the life spaces out of which individuals search for meaning.

Rotter's (1954) reference to the internal-external control of reinforcement construct as a variable dependent on the meaning given by the individual to the environment, induces inferences about the behaviour of a wide range of people. The delinquent, for instance, can be studied in the context of his interaction with HIS meaningful environment, since it is in this context that he learned to perceive causality as internal and/or external. But,as Rotter (1954) pointed out, "This meaningful world must be differentiated from the real or objective world." p.85, in as much as the meaningfulness is the result of an individualized reinforcement history. And so, Rotter went on to explain that "the term meaningful environment as used here refers to the acquired significance or meaning of the environment to the individual." p.86. This does not however prejudice the fact that each society has values and norms which imply the existence of a generalized

expectancy of reinforcement against which idiosyncracies may be judged. Idiosyncracies are, actually, the offspring of societal values and norms.

In Rotter's view then, the tendency toward internality or externality in causal attribution, is, like other personality dispositions, acquired through learning, and the application of this learning in the context of the individual's environment is an indication of the meaning the environment has for the individual.

Judged as a theoretical approach against the approaches adopted by most theorists of socio-cognitive development, Rotter's approach suffers from ignoring the Piagetian tradition of showing the relevance of theory to the complications of developmental ages and stages. Indeed, Rotter et al. (1972) appear to have been aware of the problem but to have ruled it out as their aim. Thus: "The purpose of the (social learning) theory is prediction of behaviour and the internal or cognitive processes related to behaviour. While the same principles may also be important in early acquisition of more simple behaviour, the theory is not primarily concerned with more molecular principles which explain why one thing in a complex situation is associated with another, nor how very simple responses are built up into complex patterns of response. It is not that such principles are unimportant, they simply are not the focus of this theory. Once the basic patterns of behaviour have been developed, the problem is to determine when one is chosen over another in a specific situation. This is the focus of this theory." pp.42 - 43 It is clear, then, that Rotter presupposes or takes for granted the development of the "basic pattern of behaviour" For a social learning theory, the omission is serious, since later patterns on which a theory of this kind may be built depend so fundamentally on these basic patterns. The omission is not ameliorated much by the statement of Rotter et al. (1972), that

social learning theory has a special pertinence for the study of personality development in the middle childhood years and beyond. They failed to show how, theoretically. Nor is the omission effectively remedied by their view that "unlike many developmental theories (for example Freud and Piaget) which emphasize a maturational basis of change, social learning theory emphasizes behavioural changes that are a function of individual experience and variations in psychological situations. Maturationally oriented theories of personality development, although usually recognising the importance of experience, are typically vague about the manner in which the experiences affect behaviour." p.196.

Empirically, however, a lot of research with people of varying age groups has been generated by Rotter's social learning theory constructs, not least, researches on the internal versus external control of reinforcement construct and the scales devised for the measurement of this construct. Evidence of this fact can be found in subsequent sections of this review of literature. So Rotter may perhaps regard the success of his theory in the empirical area as making up for the omission of psychogenetic stage details in his theory.

JONES AND DAVIS

Jones and Davis (1965) belong to the Heider (1958) person perception tradition of studying causal attribution. They aimed first at simplifying Heider's model by attempting to account for the causes of behaviour in terms of the effects of these behaviours. This was a consequence of their "belief that the kind of systematic conceptual structure that is needed must involve an analysis of phenomenal causality, or the determinants and consequences of attributing causation for particular actions." p.220. Their second aim was to put forward their theory of correspondent inference "which systematically

accounts for a perceiver's inferences about what an actor was trying to achieve by a particular action." p.222. Unlike Heider and Rotter, however, Jones and Davis seem to be concerned only with the attribution of intentions by a perceiver to an actor or the person perceived - a part, albeit an important part, of Heider's interpersonal perception scheme.

Jones and Davis preface their formal definition of the term "correspondence" with the explanation that all actions have effects on the environment. From the perceiver's point of view, any effect of another's action is a potential reason why such a person had engaged in the action. To infer that the action occurred for a particular reason is to specify the actor's intention, and, indirectly, an underlying disposition. Since both intentions and dispositions are attributes of the person, the perception of a link between a particular intention or disposition and a particular action, may therefore be called an attribute-effect linkage. Correspondence can then be said to occur when, "given an attribute-effect linkage which is offered to explain why an act occurred, correspondence increases as the judged value of the attribute departs from the judge's conception of the average person's standing on that attribute." p.224. In other words, the more idiosyncratic the consequences of behaviour, the more correspondent they are, that is, the more informative they are of the behaving individual. Conversely, the more common or socially desirable the consequences of behaviour, the less informative they are of the individual's dispositions. In this sense, idiosyncracy in attribution implies extremism in causal attribution.

Jones and Davis summarized their theory of correspondence thus: " Our most central assumption in considering the attribution of intentions is that actions are informative to the extent that they have emerged out of a context of choice and

reflect a selection of one among plural alternatives, -----, it is apparent that the distinctiveness of the effects achieved and the extent to which they do not represent stereotypic cultural values determine the likelihood that information about the actor will be extracted from the action. We have used the term 'correspondence of inference' to refer to variations in this kind of informativeness. To say an inference is correspondent, then, is to say that a disposition is being rather directly reflected in behaviour, that this disposition is being rather unusual in its strength or intensity. Operationally, correspondence means ratings toward the extremes of trait dimensions which are given with confidence." p.264.

One can infer from this that Jones and Davis expect that attribution of intention as an inference, should give information about the attributor. If such information is not given then attribution has probably not served its purpose. The value of this view would seem to lie in its guidance toward making attribution scale contents relevant, valid and reliable - a desirable end in itself. Nonetheless, it is necessary to observe that if the assumptions of Jones and Davis are pursued to the extent of overemphasizing the unusualness of dispositions which attributions must reveal, then the danger appears, of overlooking the socio-normative context out of which behavioural dispositions evolve or within which such dispositions are learned. This would be taking a fish out of water and expecting it to survive.

Apart from social desirability, Jones and Davis related two other variables to the concept of correspondence of inference, namely hedonic relevance and personalism. An act of another is hedonically relevant for the perceiver when the particular action consequence promotes or undermines the perceiver's values or when it fulfills or obstructs his purpose. Jones and Davis found empirical evidence for the hypothesis that hedonic

relevance increases correspondence in the inference process. Personalism, the actor's intention to benefit or harm the perceiver, involves an imputation by the perceiver of an awareness on the part of an actor that the latter's acts are going to positively or negatively affect the interests of the perceiver. Thus the attributable consequences are not only seen to be hedonically relevant to the perceiver, but also personally involving. It follows that personalism, like hedonic relevance, increases the correspondence of inference in as much as the hedonic relevance and personalism of the consequences of an act are offered by the perceiver as explanations of why the act occurred.

Although the theory of Jones and Davis (1965) is more limited in its explanatory scope than those of Heider (1958) and Rotter (1954), it points in depth at the cognitive processes of person to person attribution with intention as the primary attribution factor. It has not been shown, however, that attribution to objects other than persons, e.g. chance, luck, fate, etc., does not involve the attribution of intention. In fact, attributions of the latter kind could, in the words of Jones and Davis themselves, increase correspondence, that is, tell us more about the personality dispositions of the attributor.

KELLEY

Kelley (1967) like Jones and Davis (1965), set out to organize Heider's (1958) theory, but in such a way as to show the relevance of the theory to important developments in modern social psychology. First, Kelley pointed out the relevance of attribution theory to the perception of motivation, a relevance which was first brought out empirically in the case of Rotter's social learning theory by Crandall et al. (1962) and Crandall et al. (1965). Then Kelley went on to analyse in a most useful

manner, internal and external attribution from the point of view of the covariation of cause and effect. Variations in effect can be over entities, over persons, over time or over modalities of interaction with the entity. "Attribution to the external thing rather than to the self requires that I respond differentially to the thing, that I respond consistently, over time and over modality, and that I respond in agreement with a consensus of other persons' responses to it." p.195. This presentation of an experimental model of the attribution process, although idealistic when one considers the human factors involved, does point the way, like Jones and Davis (1965) did, toward attribution scale construction, validation and reliability testing. Unlike the Jones and Davis model, however, Kelley's does not consider the consequences of attribution in isolation from the socio-normative context. Moreover, by providing an analysis of variance model-entities x time/modality x persons, Kelley layed the foundation for a powerful method of testing hypotheses derived from the causal attribution construct. He stated: "In general, we might say that the suggestive criteria for the possession of valid knowledge about the external world are distinctiveness of response coupled with consistency and consensus." p.195. Kelley accommodated in this context the theory of correspondence given by Jones and Davis (1965) in regard to the distinctiveness of response as a rich source of information about the individual, but also showed in a way not realised by Jones and Davis, that the extent of distinctiveness of response can only be known when consistency and consensus are taken into account.

The four criteria of external validity, namely, distinctiveness, consistency over time, consistency over modality, and consensus, suggest an approach to indexing the individual's state of information regarding his world, a basis for his attribution of causality. "The attribution he makes on any

given occasion depends on some sampling of the information available to him, both from his own present and recent experience and from social sources. The more consistent this information is, the more stable will his attribution be. ------. In brief, information level is high for a person who can make highly stable but differentiated attributions." p.198. The converse may perhaps be hypothesized in respect of groups like delinquents, namely, that information level is low for a person who makes or tends to make unstable and undifferentiated/ differentiated attributions. If the receptive mechanisms in the organism can be said to be normal, then the sources of information for such groups and their dependence on such sources become crucial factors in the type of attribution they make. As Kelley pointed out, information dependence can be defined objectively in terms of potential and actual effects on the receiver, and subjectively in terms of anticipated and experienced effects.

When the effects of information are considered the way Kelley has, in terms of potential, expectancy, reinforcement value and actual effects, one notices a certain amount of fusing of the social learning theory approach with the person perception approach. This way, Kelley's aim of organising attribution theory towards an explanation of social psychological concepts, are fulfilled, in that "these concepts are useful in organizing a great deal of the social psychological literature on the conditions governing (a) susceptibility to persuasion, (b) immediate success of persuasion, and (c) the persistence of effects." p.200. These conceptions are widely used in modern social psychology, and are exploitable in research on causal attribution among different groups of people - indeed, Section C of this review (below) will show this to be so. Thus, in regard to susceptibility Kelley hypothesizes that a person will be more susceptible to influence the more variable

or unstable his prior attribution has been, and, instability will be high for a person who has (a) little social support, (b) prior information that is poor or ambiguous, (c) problems difficult beyond his capabilities, (d) views that have been disconfirmed because of their inappropriateness or nonveridicality, and (e) other experiences engendering low self confidence.

de CHARMS

As has already been indicated in the introduction to this study, de Charms (1968) asserted that man's notion of causality comes from a source of knowledge that is available to everyone from his own private feelings and behaviour. "We get our knowledge of causation from our knowledge of motivation.-----. The first 'cause' that any of us knows is ourselves. When we are motivated we cause things to happen. We have immediate knowledge of our 'motives' prior to any knowledge of physical causes.----. The most important thing in the world for a newborn child is his own body. He learns about it first and what it can do in relation to other things. He learns that he is a causal agent." p.9. Unlike Michotte (1963), de Charms believed that even the idea of physical causality has its roots in personal causality and for that reason, to look for an explanation of motivation in physical causality is a mistake. de Charms is in agreement with Maine de Biran in respect of the feeling of "effort" that the child experiences in the discovery of himself as a locus of causality, and with Piaget (1929) in the developmental character of the notion of causality. de Charms, however, pays special attention to what he terms personal causation - the initiation by an individual of behaviour intended to produce a change in his environment. The phrase personal causation, is meant to bring to mind the personal knowledge of being an agent of change in the environment. de Charms makes personal causation a basic postulate of motivation in which effectiveness in the

production of changes is seen as a primary propensity of man. This propensity is the guiding principle upon which specific motives are built. Specific motives are then linked to the numerous problems - obtaining food, achieving success, gaining friendship, etc. - that the environment sets. "The dimension that underlies all of these is the attempt to overcome the problem through personal causation, - the desire to be master of one's fate.------ Attaining a goal through luck, chance, or through the benevolent agency of a helper is not the same as doing it myself." pp. 270 and 271. A question induced here by de Charms' theory is one of how a man behaves when he has come to'believe' he is not personally effective in the attainment of his goals - specific or general. This question is all the more relevant as de Charms took as his basic postulate that man is the origin of his behaviour - the locus of causality for his behaviour.

de Charms tackled the question in a general way by proposing two social types - Origins and Pawns. "An origin is a person who perceives his behaviour as determined by his own choosing; a pawn is a person who perceives his behaviour as determined by external forces beyond his control." pp. 273 - 274. Feeling like an origin has strong effects on behaviour as compared to feeling like a pawn, but the distinction is continuous, not discrete, in that a person feels more like an origin under some circumstances and more like a pawn under others. The Origin - Pawn variable may be used as a category by a person to order his perceptions of the behaviour of the people that he meets in social interaction.

Skilling (1972) tested de Charms' theory in experimentally created origin - pawn situations. Departing somewhat from de Charms' emphasis on the person, Skilling proposed that behaviour can better be understood as a social psychological phenomenon, that is, that it is the individual and the situational

factors together that combine to affect behaviour. The main findings indicated that interaction effects were obtained on the quality component of behaviour but not on the quantity component. Skilling urged further research into that aspect that a theory like de Charms' should deal extensively with, but which de Charms mentions only in a general way, namely, the ontogenetic aspect of the origin - pawn variable.

Finally, de Charms pointed out the similarity between his personal causality approach and the approaches of Heider (1944, 1958) and Rotter (1954, 1966), respectively. The similarity hinges on de Charms' point that men learn to distinguish between situations in which it can be assumed that a person is acting of his own accord and situations in which he is coerced. "In Heider's (1958) terms, this is the distinction between inferring that the locus of causality for behaviour is internal to the actor, and inferring that it is external to the actor. In our (de Charms') terms, this is the distinction between seeing a person as an origin and seeing him as a pawn." p.297. And, although de Charms saw Rotter's approach as pointed primarily in the objectivist and behaviourist direction, he did acknowledge that "the similarity between the concept of internal control of reinforcement and the origin concept is striking, especially when the Rotter group use the phrase 'internal locus of control' which is so similar to Heider's 'internal locus of causality," the concept from which the origin notion sprang." p.321.

SUMMARY

The first section of the review of literature has been devoted to an examination of the theories and processes of of causality and causal attribution put forward by a number of influential figures, beginning with Hume and Maine de Biran both of whom, as recent philosophical precursors, had

as opposed to processes that lead the individual to attribute event outcomes to external factors like chance, luck, fate, other people, etc, are all learned in the social contexts of the individual's environment within which meanings are sought. Although Rotter failed from the theoretical angle to detail human developmental steps in the process of acquiring these attribution orientations, his constructs, especially the locus of control one, have generated a great deal of empirical work with people of various age groups.

Jones and Davis followed the Heider approach but regarded their perceiver as an information processor who evaluates the desirability of non-common or non-conventional effects available to the actor. It is the non-common effects that reveal the most information about the actor, thus making for the correspondence of inference. Still in the Heider tradition, Kelley extended the theory to include self-attributions for internal states as well as attributions to other people. Kelley's theory is characterised by his mention of the four criteria of stable attribution, namely, distinctiveness, consistency over entities, consistency over time and modality, and consensus.

The last theory to be considered in this part was that of de Charms. He asserted that the first cause known to all of us is ourselves, from which arises the motivation to cause things to happen. Here the influence of Maine de Biran is felt. But de Charm's theory is distinguished by his creation of two social types - those who are origins or feel like causal origins and those who feel like pawns on the world stage. His definition of the origin ~ pawn dimension is remarkably similar to Heider's definition of the construct of locus of causality and even more similar to Rotter's definition of the internal-external locus of control construct. This is evidence of the convergence of the approaches of psychologists to the problem of causal attribution. de Charms, however, was among those who eschewed the psychogenetic approach.

SECTION B: THE SELF-CONCEPT IN RELATION TO INTERNAL-EXTERNAL LOCUS OF Control

Self-concept(a term used interchangeably with self-esteem in this context) is a strategically important variable in the plan of this study. It is, therefore, thought necessary that it should be given some prominence in the early part of the review of literature. To this end, this part of the review deals briefly, first, with early theoretical, clinical and empirical approaches to the study of the self-concept; secondly, since this study concerns people who are still in the throes of developmental changes, the review examines studies that relate the self-concept to developmental circumstances; thirdly, since the experimental group of young people involved here are delinquents, the review examines a few studies that relate the self concept to maladjustments of the type; fourthly, those studies that relate the self-concept in young people to internal-external locus of control are looked at; and finally, psychometric characteristics of the Tennessee Self-Concept Scale (Fitts 1965), used in this study, are given.

(i) Early Theoretical, Clinical & Empirical Approaches

The self-concept and its implications have excited the interests of psychologists for many years. The division by James (1890) of the abstraction called 'self' into the material self, the spiritual self, and the social self, and his assertion that "--- a man has as many social selves as there are individuals who recognize him and carry an image of him in their minds." p.294, are now psychological cliches as well as subjects of controversy.

Mead (1934) elaborated on Jame's concept of the social self as the process by which the individual becomes a compatible and integrated member of a social group. During this integrating

process, the individual internalizes the ideas and attitudes expressed by the key figures in his life, adopting them and expressing them as his own. Since it is through the views and reactions of these generalized others that the individual gets an awareness of himself, (an expression of Cooley's (1902) looking-glass self), these generalized others become the key to the formation of the individual's self-concept.

A number of contemporaries of Mead, especially Freudians and neo-Freudians, adopted a clinical approach to the study of the self and the self-concept. Thus Adler (1927) placed great emphasis on the inferiority produced by an impaired bodily organ, aside altogether from the socially defined bases of inferiority feelings. After convincing himself that feelings of inferiority are an inevitable occurrence of the childhood experiences of every individual, and adding that such inferority actually goads and motivates the normal child to achieve greater competence, Adler concluded that whether a child does or does not overcome social inferiority depends in good part on the acceptance, support, and encouragement of the parents and immediate friends. At the other end of the scale of antecedents of inferiority feeling, is over indulgence of the child which Adler warned against. So, for Adler, the level of one's self-esteem depends on efforts at managing three antecedent conditions - organ inferiority, social inferiority and over-indulgence.

Among neo-Freudians, Karen Horney (1945) believed that there exists a number of conditions, generically termed "basic anxiety", which are major sources of unhappiness and reduced personal effectiveness. Such conditions include domination, indifference, lack of respect, disparagement, lack of admiration, lack of warmth, isolation and discrimination. Defenses against the anxiety which results from these conditions consists in forming an idealized image of one's capacities and

goals. The idealized image plays its part in the individual's self evaluation by bolstering self-esteem through its very loftiness, while at the same time leading to disatisfaction when its unrealistic levels are not achieved.

Sullivan (1947) was, however, attracted by Mead's (1934) interpretations of the social origins of personality. Sullivan believed that the awareness of other people is an omnipresent phenomenon and has a large evaluative component. Like Horney (1945), Sullivan talks in terms of anxiety as an interpersonal phenomenon that occurs when an individual expects to be or is actually rejected or demeaned. The individual guards against such anxiety generating rejection and demeaning which usually mean loss of self-esteem. Sullivan emphasized the role played by parents and siblings as well as the importance of the individual's ability to cope with or minimise threats to self-esteem.

Still in the clinical tradition, Rogers (1951) contributed to the study of the self-concept through his discussions of the conditions that facilitate self-acceptance. For Rogers, it is the self-image evolved by each individual that serves to guide and maintain his adjustment to the external world. The image develops out of interactions with the environment, and reflects the judgments, preferences, and shortcomings of the familial and social milieu. Accordingly when those judgments are harsh and rejecting, the individual is prevented from accepting himself. On the other hand, an atmosphere that permits free expression of ideas and affect, and is devoid of harsh and frequent evaluative comparisons, enables the individual to know and accept himself. Where parents are willing to accept differences and are able and ready to trust their child, the child can come to respect himself, gain assurance about his own values and learn to trust himself as a locus of experience.

From the above sketch of theories it is clear that the experience of self or one's awareness of one's self, is a subject that deserves serious consideration because it is fundamental to the individuals psychological well being. As Reed (1972) put it: "clearly the experience of self is inextricably involved in all other cognitive activities and states because it underlies them and acts as a selector, integrator and synthesizer.-----. It is a product of all our stored experiences and it determines our emotional responses." p.112. One of the anomalies listed by Reed as capable of affecting the self appears in circumstances in which the self is recognised in performance: a situation in which an individual may appreciate the discreteness of his entity and yet attribute some of his thoughts, imagery, actions, etc., to agencies outside himself - a form of external attribution which makes the theoretical relation of the self-concept to causal attribution meaningful. A related point implicitly or explicitly accepted by most theorists is that "to the degree that a person's self-concept is realistic, he is said to have 'insight' into himself" (Wylie, 1961, p.5). This too echoes the view expressed in the introduction to this study, to the effect that internality in attribution refers to a strong personal tendency or response disposition to be reality-oriented.

From the views of theorists and clinicians, it is necessary to move on to the views of others who adopted different kinds of empirical approaches to the study of the self-concept. Wylie (1961) who reviewed the subject with some care, observed that there had been little empirical work in the area prior to 1949. There-after and todate there has been widespread resurgence of interest especially in the empirical aspect. Wylie has listed a large number of attempts at measuring the self-concept, either as a specific construct or as part of a more general personality construct. The techniques ranged from self-descriptive Q-sort items, questionaires, adjective checklists,

and rating scales to thematic apperception tests. With many standardised measures now available, however, it is easier to test hypotheses pertinent to self-concept theories and to corroborate case history data compiled through the clinical approach.

In her review of the "self-psychology" literature, Wylie (1961) emphasized the role of the conscious self-concept or the phenomenal self, without ignoring the issue of the unconscious self-concept. She found that the important questions raised by the theories she surveyed had little support from the empirical processes employed, and this was due, in part, to four factors, (1) the lack of proper scientific characteristics in the theories themselves, (2) the inevitable difficulties encountered in formulating relevant, well-controlled research in a new area, (3) the fact that individual researches in a new area cannot be easily synthesized; and (4) avoidable methodological flaws.

Relating the methodological difficulties to studies of the antecedents of the self-concept, Wylie noted that no true antecedent - consequent designs were used. All studies reviewed used the correlational approach, where correlations were either of two reports made by the child about self and parents, or of reports made by the child and the parents. This includes studies relating the self-concept to variables like sex, role, peer relationships, etc. Todate, unfortunately longitudinal studies are still rare. Nonetheless, this does not take away the usefulness of correlational studies especially with better and better factorial techniques now available. Nor does it take away the theoretical validity of the view that familial and social factors play parts in shaping the developing self-concept. Even if the time needed for longitudinal studies were available, correlational approaches would still be needed to give full meaning to such longitudinal studies.

Rosenberg (1965) did a large scale empirical work of an attitudinal survey type on the antecedents of self-esteem among over five thousand high school students. He came up with some unexpected findings which were later supported by Coopersmith (1967). A relevant one is that social class is only weakly related to self-esteem while ethnic affiliation is unrelated. However, the amount of paternal attention and concern, which differs according to social class, religion, and ethnic group, is significantly related to self-esteem. Accordingly, adolescents who have closer relationships with their fathers, are higher in self-esteem than are those with more distant, impersonal relationships. As religious fathers are likely, by virtue of their creeds, to have close relationships with their children, their children are likely to have high self-esteem in spite of social class status. This Rosenberg found to be the case. Jewish boys were found to be more apt to have higher self-esteem than Catholics or Protestants. A greater feeling of success was found to follow this pattern as well.

Coopersmith's (1967) study of the antecedents of self-esteem was at once more intensive and more extensive, in that he obtained a wider range of information from both parents and children. He approached the antecedents of self-esteem by specifically seeking to "ascertain whether success history, transmitted values and aspirations, and responses to devaluation (defensiveness), occur with different frequency in groups differing in self-esteem." p.37. From information available to him, Coopersmith then delineated four major factors contributing to the development of high self-esteem. Foremost among these is the amount of respectful accepting and concerned treatment an individual receives from the significant others in his life. A second factor is the history of success and the status and position held in the world. The third concerns living up to values and aspirations regarded as personally significant by

the individual, and the fourth factor concerns the individual's manner of responding to devaluation. The ability to defend self-esteem reduces the experience of anxiety and helps to maintain personal equilibrium. As Coopersmith put it, "this ability to maintain self-esteem in the face of negative appraisals and discomfiture has been described by such concepts as controls and defenses. These terms refer to the individual's capacity to define an event filled with negative implications and consequences in such a way that it does not detract from his sense of worthiness, ability or power." p.37. This explanation of the ability to maintain self-esteem contains elements of the definition of belief in internal control of reinforcement, although Coopersmith seemed to link this theoretical relationship with external control orientation by arguing that "the individual who can attribute at least part of the failures and difficiencies he encounters to the external world rather than to his own limitations, is able to maintain a loftier view of his worthiness." p.43. Of course if such an attribution is realistic, that is to say, is not projective, then Coopersmith may actually be referring to internal attribution in the sense understood in this study.

Nevertheless, Coopersmith indirectly continued to clarify the link between self-esteem and internal-external attribution by focusing on the term "success" and its differential interpretation by individuals. For, he again delineated four sources of self-esteem also employed as criteria for defining success, as follows: (1) the ability to influence and control others, termed power; (2) the acceptance, attention, and affection of others, termed significance, (3) adherence to moral and ethical standards, termed Virtue; and (4) successful performance in meeting demands for achievement, termed competence. It is possible for an individual to attain high self-esteem by notable attainment in any one of the four criteria even when attainment

in the other criteria is mediocre or poor; this is why one's rating of his success may often disagree with ratings of his self-esteem carried out by others. Coopersmith's definition of the ability to maintain self-esteem in the face of negative appraisals, again accords with the present author's definition of internal control of reinforcement as involving the ability to accept reality in its negative and positive forms.

A general statement of the results of Coopersmith's empirical study of the antecedents of self-esteem is to the effect that "----- parents of children with high self-esteem are concerned and attentive toward their children, that they structure the worlds of their children along lines they believe to be proper and appropriate, and they permit relatively great freedom within the structures they have established." p.236. Coopersmith found that his results contradicted the theoretical view that children's worlds should not be structured for them. At the same time, he stressed that his results do not imply that parents of children with high self-esteem behave in similar fashions, rather, they combine differentially what his study established as the four conditions essential to the development of high self-esteem, namely, acceptance of the children, clear definition of enforced limits, respect and lattitude for individual action within the defined limits, and parental self-esteem. For the children, the psychological result of all these is a cognitively clear world, similar to a world in which internal control of reinforcement may be presumed to develop. "In the cognitively clear world, he learns to rely upon his own judgments and interpretations of events and consequences; the locus is internal and personal rather than external and social. Detailed definition of standards, and their consistent presentation and enforcement, presents the child with a wealth of information that he himself can employ to appraise and anticipate the

consequences of his actions. A psychological world that provides sparse, ambiguous, or inconsistent information makes it difficult for the child to make rational decisions - that is, decisions with predictable outcomes - and increases the likelihood that he will either continually seek aid in interpreting his environment or will gradually withdraw from it: in neither case will he come to believe that he can, himself, interpret his environment and guide himself through the thickets of its ambiguities." p.239.

Other, more specific aspects of Coopersmiths results that are of interest in this context are those connected with defensiveness, namely, that manifest anxiety is negatively associated with self-esteem, that is, persons with positive self-attitudes tend to have low anxiety scores; that psychosomatic symptoms are fewer among persons high in self-esteem; that children with high self-esteem are more effective and less likely to display marked problems; that children with high self-esteem are less sensitive to criticism, more willing to speak up when their responses are likely to evoke anger, and less likely to be distracted from public affairs by personal concerns. Persons of medium self-esteem were found to be like those with high self-esteem except that they manifested greater dependence upon others (a higher degree of external control?). Persons with low self-esteem showed greater diversity of differences. Reared under conditions of rejection, uncertainty and disrespect, they come to believe they are powerless and without resource or recourse (a still higher degree of external control?). They come to feel isolated (alienation - Rotter, Seeman and Liverant 1962), unlovable, incapable of expressing and defending themselves, and too weak to confront and overcome their deficiencies. They withdraw, become passive and compliant, suffer pangs of anxiety and the symptoms that accompany its chronic occurrence. It is thus obvious how similar, theoretically, some

of the characteristics of high-low self-esteem are to those of internal-external locus of control as defined in this study, and why the prediction of a positive relationship between internality and high self-esteem seems reasonable.

The consequence of parental treatment that bears on adjustment and mental health is put thus by Coopersmith: "From all indications, children who are high in self-esteem are apt to manifest independence, outspokeness, exploratory behaviours, and assertion of their rights; children with low self-esteem are likely to be obedient, conforming, helpful, accommodating, and relatively passive. The child with high self-esteem is likely to be a considerable source of travail and disturbance to his parents, teachers, and other persons in authority, and the child with low self-esteem is more inclined to be overtly submissive and accepting. We should note, however, that persons who are low in self-esteem have higher levels of anxiety, more frequent psychosomatic symptoms, are rated as less effective, and are likely to be more destructive than persons who regard themselves with considerable worth." p.253.

As at least one of the hypotheses of the present study is that delinquents - children with problems of adjustment, to put it in a broader manner - will have lower self-concepts than non-delinquents, there will be occasion to comment again on Coopersmith's statements concerning adjustment, mental health and self-esteem.

(ii) The Self-Concept in the Course of Development.

That the self-concept is a highly developmentally sensitive phenomenon has never been in dispute. For instance Koocher (1974) has recently shown that irrespective of sex, the ideal self increases in uniformity and positive value as children move beyond the Piagetian pre-operational level of

cognitive functioning. What researchers are busy establishing are the circumstances (social, physical, economic, etc.) under which self-esteem develops positively or negatively and the consequences of such development.

From the point of view of the present study, the results of studies involving the developing self-concept and objects of interaction like parents, peers, teachers, schools etc., are important especially because such objects are built as loci of control into the Causal Attribution Scale for Children, devised for this study (cf. section H below). Prominent among the circumstances under which the self-concept develops are naturally, familial ones, especially parent-child interaction. Coopersmith (1967), as has already been shown, presented strong evidence of the effect on the developing self-concept of parent-child interaction. Wolff (1972), presents supporting evidence from clinical observations and prospective and retrospective studies which strongly suggest that (a) those who feel insecure in relation to their parents early in childhood, have greater difficulty in developing a firm sense of identity than those whose early experiences were relatively more secure (although how early insecurity, as an antecedent, necessarily leads to identity difficulties, as a consequent, is hard to see.) (b) the resolution of crises of separation, real or fantasized, is dealt with by identification with the lost person which may lead to identity problems, and (c) crises of being uncertain who to be and how to relate to others become apparent whenever a person is faced with having to make major choices and decisions. Wolff suggested that a genuine sense of identity includes the capacity to acknowledge and tolerate conflict and uncertainty where they exist, both within oneself and in one's relationships to others.

Donnenwerth et al. (1973) presented evidence suggesting that the images of father and mother are somewhat more

discriminated in delinquent than in non-delinquent girls. On the other hand, the delinquent girl's self-image appeared closer to the father's image. The cognitive differences were traced to diverging patterns of reinforcement used by parents of normal and delinquent girls. (Will delinquent girls score more internally or more externally with regard to the father as a locus of control of reinforcements?).

Schartz and Baden (1973) examined female adolescent self-concepts in relation to the influences of peers, parents and teachers. They found that peers and adults make important and independent impacts on the self-concepts of adolescent females. The influences of peers were of substantially more significance for whites than for blacks. They regarded the imbalance in heavy black dependence on adults and heavy white dependence on peers equally disadvantageous. They then suggested that if lower class black adolescents did not participate in adolescent subcultures, their adolescence would be very much truncated; and, for whites, heavy self-involvement with peers and moderate involvement with adults might lead to the label of potentially deviant. A further but less differentiating study of female adolescents was carried out by Gray and Gaizer (1974). Seven female twelth graders rated 100 positive and negative traits as describing or not describing themselves. Each subject's two best friends and parents were asked to rate the traits as they felt the subject would see herself. Both parents and friends gave ratings which correlated significantly with those of the subjects. Friends were, however, slightly more accurate though less consistent. Other kinds of parent-adolescent relationships which have been found to relate to the development of the self-concept include parent-adolescent communication and the marital communication and satisfaction of parents (Matteson 1974). Gecas et al. (1974) contrasted the mirror and model theories of self-concept

development and found indications that the child's self-concept was more closely related to his parents' perception of him (mirroring) than to his parents' self conceptions (modeling). The differences between mirror and model relationships were greatest on the activity rating dimension and smallest on the worth dimension. While there was a slight tendency for mirror correlations to be stronger for cross-sex parent-child relationships, both boys and girls tended to model father more than mother.

Where the influence of a single parent on the self-concept of the child is studied, the tendency has been to focus on the mother. Thus, Tocco and Bridges (1973) found that the self-concept scores of deprived mothers and their children were significantly related, and that mothers' self-concept scores at the beginning of the school year, were significantly related to scores indicating changes in their children over the year. A continuing strong relationship between status and growth, such as is shown by Tocco and Bridges, is obviously of great clinical interest. Another mother - relevant study was performed by Miller (1975) who found that, in comparing a black inner city sample with a white suburban one, mother's level of education had an effect on the self-esteem of the inner city black male child. Where mother had less than a high school education, the male child seemed to have lower levels of self-esteem. This did not emerge as significant for the inner city female sample. Moreover, full-time employment of the mother had a greater effect on the child's self-esteem for the inner city sample than for the suburban sample.

There is evidence, too, that a teacher's self-acceptance relates to the development of good self-concepts in his pupils (Edeburn and Landry 1974), and that children's self-concepts relate significantly to perceived teachers' self-concepts (Schartz and Stryker 1970). Frease (1972) found,

further, that one's academic self-concept develops in a consistent relationship with teachers' evaluation in the form of grade point averages. If a youth is regarded as a non-delinquent and a good student from both the behavioural and academic standpoints, this in all likelihood will be his self-image, and his behaviour should mirror these expectations. On the other hand, to expect a youngster to be a delinquent and a recipient of low grades may well result in the prophecy becoming fulfilled. Schwartz (1974) regarded schools as a potentially valuable source of self-esteem and self-knowledge in children.

Regarding evidence linking self-esteem with sex, Koocher (1974), as shown already, found that irrespective of sex, the ideal self increased uniformly with cognitive growth, and Tocco and Bridges have found only the self-concept of males being more sensitive to the level of education and full-time employment of the mother. Boham (1973) found that among fourth, sixth, eighth and tenth graders, age and sex comparisons indicated significantly low self-concept scores for 10th grade females only.

If the self-concept is so generally related to the child's developmental circumstances, how it affects and is affected by developmental trends unacceptable to society must, naturally, be of interest. The next subsection examines studies related in some way to the issue - the issue of maladjustment.

(iii) The Self-Concept and Maladjustment

This subsection is meant to subsume the self-concept problems of delinquents who may be broadly categorized as maladjusted. So important is the self-concept in socialization that Reckless et al. (1956) regarded it as an"insulator" against delinquency. In a study in which a number of children, rated as non-delinquency prone, were selected from

schools in the highest delinquency areas of Columbus, Ohio, and were administered a number of assessment measures including delinquency proneness and social responsibility scales, interviews with mothers and their children, etc., Reckless et al. noted several familial and personal characteristics similar in many respects to those Coopersmith (1967) found in families of children with high self-concept scores. In general, internalization of non-deviant attitudes featured prominently. Parental supervision and interest formed a strong family profile, but within parental structures, the children had considerable freedom. Reckless et al. were able to conclude that their pilot study pointed to "the presence of a socially acceptable concept of self as the insulator against delinquency----" p.746.

In the second phase of their study, Reckless et al (1957) argued that "if appropriately good concepts of self and others, as manifested by young persons, might insulate against delinquency, adverse concepts of self and others might set the trend toward delinquency-----." p.566. A comparison of scores by 'insulated' and potentially delinquent groups on measures used in the first phase of the study gave support to the thesis that self-concept may be an underlying component in delinquent or non-delinquent conduct. A follow-up to the Reckless et al. (1956) study by Scarpitti et al. (1960), four years later, confirmed an original prediction that the non-delinquency prone subjects would remain law-abiding in the future. "At an average age of 16, these boys continue to assess themselves, their mothers, fathers, teachers, and schools favourably." p.558.

Lively et al. (1962) did a follow-up of the group found by Reckless et al. (1957) to be vulnerable to delinquency - a group which was of 12 year olds at the time of the Reckless study. Lively et al. found "further confirmation to the fact that the

direction of socialization and self-concept are important indicators of a veering toward or away from delinquent behaviour as well as to stability of socialization and self-concept assessments from 12 years of age on through 15." pp. 165-166. This confirmation gave Lively et al. grounds to regard the self-concept as a predictor of juvenile delinquency.

However, the theory and methodology have not been without their critics. Jensen (1973) took issue especially with the self-concept measure employed by Reckless and others, and so went on to utilize his own measure. His "analysis found such elements of inner-containment as self-esteem, a sense of self-control, and conventional belief to be negatively related to delinquency, even when attempts were made to hold some aspects of the external situation constant." p.470. Denzinger (1973) found that the notion of the negative self-concept of delinquents was not confirmed. Indeed, her study indicated further that the self-concepts of convicts in general did not differ from the self-concepts of the normal population. Surprisingly, however, Jensen seemed to have reached a different conclusion in an earlier study, mention of which he failed to make in the 1973 study. Jensen (1972) studied the personal relevance of infraction in variable socio-cultural contexts by examining the association between delinquency and adolescent self-conceptions among junior and senior high school students differentiated on the basis of race and status. Using questionaire data and official police records, official and personal delinquent evaluations were found to be positively related, the strength of the association varying by status among whites and by attachment to the law among blacks and whites. Moreover, while delinquents tended to be lower in self-esteem than non-delinquents, this relationship was found to vary, such that delinquents and non-delinquents differed most among middle-to-upper status blacks and

least among low status blacks. While Jensen may take issue with Reckless et al. as to the methodology of testing the inner-containment hypothesis, these earlier results of his do not seem to be consistent with his later (1973) results, to the effect that elements of inner-containment such as self-esteem, relate negatively with delinquency.

It is worth noting, however, that neither the Reckless et al. nor the Jensen self-concept measures seem to have been standardized and one suspects that at least part of the differences between their findings, may lie in that fact. Indeed, as can be seen below, Japlin (1968, 1973) who used a standardized scale (the Tennessee Self Concept Scale, Fitts 1965) in studies of changes in self concept among delinquents, gave strong implicit support to the Reckless et al. hypothesis that the self-concept is a powerful component in delinquency. Schartz and Stryker (1970) using a semantic differential technique did find some evidence to support the relation of the self-concept to delinquency, although they, in turn, were critical of the method used in the Reckless et al. series of studies. Marshall (1973), constructed a scale of delinquency proneness similar to that of Reckless et al. (1956), but applicable to a British sample. He found that the type of delinquency proneness scale proposed by Reckless et al., can be a useful tool in delinquency prediction but only when the external or social pressures on a child are in conflict. It is hoped that the present study will add to present information on the matter when the prediction that delinquents will not only be lower in self-concept than non-delinquents but that their internal control scores will correlate less highly with their self-concept scores than in the case of non-delinquents, is tested.

Presupposing for the moment that the self-concept does

provide some insulation against and does help in the prediction of delinquency, one may argue that improving the self-concept should also help toward a retreat from delinquent tendencies. Such a change toward recovery is actually reported by Joplin (1968) whose study (involving the Tennessee Self-Concept Scale) demonstrated marked self-concept changes in juvenile delinquents who completed a special institutional retraining programme. In a follow-up of that study, Joplin (1973) divided his subjects into recidivists and non-recidivists. Both pre- and post-training measures showed that both groups were different in self-concept, and that they were different at the point of release - the non-recidivist group showing the greatest positive change in self-concept. On the other hand, Brown and Renz (1973) who set out to alter the reality self-concept of seventh grade culturally deprived girls, found that there was no change in the self-concept of any subject. However, teachers of the subjects did perceive them as significantly changed in the characteristics of intelligence and grooming. Brown and Renz's hypothesis that deprived subjects would have low self-concepts was not supported. But studies by Daste (1973), Russo (1974) and Fryrear (1974), strongly support changes in self-concept after therapeutic programmes.

There are a few other studies involving the self-concept and maladjustment. Simmons et al. (1973), studying the self-image at adolescence, found that children, especially those between the ages of 12 and 13 compared with the 8-11 age group, exhibited heightened self-consciousness, greater instability of the self-image, slightly lower self-esteem, and a less favourable view of the opinions held of them by significant others. Although Simmons et al. presented evidence suggesting that the child's environment may have a stronger effect in producing such changes than age, their reference to the 12 to 13 year age group supports the view of Reckless et al. (1957) about the criticality

of the 12th year for turning delinquent. Hauser and Shapiro (1973) studied the multiple self-images of non-psychotic disturbed adolescent patients and found that patients perceived greater discrepancy between all idealized views of themselves and their current self-images. Moreover, temporal self-images and peer self-images differentiated only between sex and age groups.

Lyell (1973), working on the premise that adolescent identity becomes disturbed because adolescent activities are not valued, found that young adult men evaluated themselves positively while adolescent males and females and adult young women expressed disatisfaction with themselves. Her evidence showed further that adult women do not achieve the social acceptance that males do after emerging from adolescence. Wax (1974) compared the self-concepts of Negro and White pre-adolescent delinquents, and found no significant difference between the two groups on all but one of the concepts rated, namely, "Boys who get into trouble", which negro boys rated positively and white boys rated negatively.

Last but by no means least in this series of miscellaneous studies of the self-concept and maladjustment, is the study of Witte and Witte (1974) who examined the differences between personality self-descriptions of the 'real self' and 'ideal self' in German male delinquents and non-delinquents as a function of their socio-economic status. Differences between real and ideal self were largest for the highest social level and smallest for the juvenile delinquents. Adolescents from higher socioeconomic levels described themselves as more radical than those from lower strata, and delinquents showed less persistence than matched groups of lower-class adolescents,

In spite of disagreements over the methods used to study the link between the self-concept and delinquency, there seems to be no doubt that the level of the self-concept significantly

relates to both the tendency toward delinquency and the retreat from that tendency. The association between the self-concept and internal-external orientation needs to be reviewed as a step toward measuring the two variables in delinquents - a major part of the present study.

(iv) The Self-Concept and Internal-External Control Orientation

Ziller et al. (1969) conceptualized self-esteem as a self-social construct to take account of the fact that self-evaluation emerges largely within a social frame of reference. In this context, Ziller et al. assumed, in constructing their self-esteem measure that subjects with high self-esteem should have a higher potential for self-reinforcement. From this Platt et al. (1970) inferred that high scorers on the Ziller et al. self-esteem measure, should score in the internal direction on Rotter's (1966) Internal-External Control Scale - a prediction similar to the one made for the subjects of the present study. However, as far as perceived locus of reinforcement was concerned, Platt et al. found no relationship between the Rotter Internal-External scale and the Ziller et al. self-esteem measure. Platt et al. called for further research to verify the relationship further. Fitch (1970), on the other hand, found a low but significant relationship between external locus of control and low self-esteem. Fitch's main postulate related to Heider's (1958) attribution model. He had hypothesized that self-esteem would be enhanced by attributing success outcomes to causal sources within the person and by attributing failure outcomes to causal sources outside the person. The prediction was supported.

Fish and Karabenick (1971) used the locus of control scale and the Janis and Field (1959) self-esteem measure, and found support for the prediction that people with high self-esteem tend to be more internally oriented. Share (1972) studied the same relationship in grades two, four and six pupils and found

generally more significant relationships with grades six, four and two pupils, in that order. The relationship was significant for both sexes at grade six. White (1972) examined the effects of self, adult and peer evaluations of the performance of under-achieving boys on the development and long-term maintenance of internal control. Results suggested that self-evaluation and adult evaluation were conducive to the development of internal control, but that peer evaluation was not.

Fox (1972) did a comparative study of mildly mentally retarded children, children with low average intelligence and children of average intelligence. A relevant finding of hers is that, in general, locus of control beliefs are positively related to the evaluative factor of a semantic differential scale, although acceptance of responsibility for academic failures might be associated with poorer self-concepts in the children. King (1973), working on 9 - 11 year old inner-city black children, found significant correlations between self-esteem and Crandall et al's. (1965) Intellectual Achievement Responsibility Questionaire, and between self-esteem and self-reinforcement in a learning situation. Heaton and Duerfeldt (1973) also found internal-external control, self-esteem and self-reinforcement significantly correlated in adults.

Ryckman and Sherman (1973) decided to take the sex variable into account, and found that there were small but significant correlations for men and women, indicating that both men and women with high self-esteem tend to be more internally oriented. Organ (1973) studied locus of control and clarity of self-concept in adult males only, and found a positive and significant relationship between the two personality concepts.

Strassberg and Robinson (1974) studied the relationship between locus of control and the self-concept in drug users and showed that previous findings relating locus of control to adjustment and self-concept among non-drug users, were valid for

narcotic users as well. Finally, Page (1975) studied changes in locus of control and self-esteem among black males and females aged 12 to 19 in a flight training camp. Results showed gains in self-esteem by subjects under 16 years of age and by subjects in middle income families. No significant change was found in belief in internal-external control.

It is obvious that over the few years during which correlational studies of self-esteem and locus of control have been done, considerable evidence has emerged linking growth in self-esteem with growth in internal-external locus of control. As Ryckman and Sherman (1973) observed, "such an outcome is not surprising since earlier investigations have indicated that internals describe themselves as being self-confident, independent, assertive, persevering and insightful, while externals tend to describe themselves unfavourably, as being self-pitying, anxious and inadequate." p.1106. The present study continues a study of variants of that relationship in a British context. The self-concept scale employed, is the Tennessee Self-Concept Scale (Fitts 1965), for which psychometric characteristics are summarized below.

(v) Psychometric Characteristics of the Tennessee Self-Concept Scale (T.S.C.S.)

Fitts (1965) sought to develop a self-concept scale that would be "simple for the subject, widely applicable, well standardized, and multidimensional in its description of the self-concept." p.1. He believes that the T.S.C.S. has fulfilled this need as well as helping to tie together research and clinical findings on the self-concept. The importance of such a scale matches the importance of the fact that "the individual's concept of himself has been demonstrated to be highly influential in much of his behaviour and also to be directly related to his general personality and state of mental

health. Those people who see themselves as undesirable, worthless, or 'bad' tend to act accordingly. Those who have a highly realistic concept of self tend to approach life and other people in realistic ways. Those who have very deviant self concepts tend to behave in deviant ways. Thus, a knowledge of how an individual perceives himself is useful in attempting to help that individual, or in making evaluations of him." p.1.

The T.S.C.S. is meant for people of twelve years and over. Administration can be individual or group in both its counseling and clinical/research forms (the latter form is used in this study). Mean testing time is 13 minutes. It was standardized on a broad sample of 626 people of ages 12 to 68, men and women, negro and white, representing a spectrum of social, economic and intellectual levels. But "the effects of such demographic variables as sex, age, race, education, and intelligence on the scores of the scale are quite negligible," (Fitts, 1965, p.13).

Reliability co-efficient for total (positive) score is .92, and co-efficients for subscale scores range from .60 to .91. Regarding validity, the total scale and subscales are found to discriminate effectively between and within groups of, for instance, psychiatric patients and non-patients. Satisfactory construct validity data were also obtained in respect of several personality measures including the M.M.P.I. and the Edwards Personal Preference Schedule and the subscales of these measures.

In using the T.S.C.S. in the present study, the intention is (a) to find what differences there are between and within delinquents and non-delinquents, taking into account the magnitude of internality-externality scores for these subjects, and (b) to find what relationship there is between the Causal Attribution Scale for Children (C.A.S.C. - cf. Section H) and total scores of the T.S.C.S..

SUMMARY

In this subsection, studies of the self-concept as related to the plan of this study were reviewed. Early theoretical and clinical views of the self-concept were examined, to begin with. This led to empirical studies of the self-concept in the course of development. A majority of the studies revealed that the self-concept is consistently related to the child's personal and socio-developmental circumstances.

If the self-concept is so critical in the course of normal development, it is likely to be a significant variable in maladjustment - more specifically, in delinquency. Although disagreements were detected in findings relating the self-concept to delinquency, the stronger evidence was on the side of the existence of such a relationship - such that high self-esteem tends to protect against delinquency while low self-esteem is associated with delinquency proneness.

Available evidence makes it safe to say that a significant, if sometimes low relationship, exists between the self-concept and internal-external locus of control, such that people with high self-esteem also tend to be internal in orientation.

The subsection ended with the presentation of a summary of psychometric characteristics of the Tennessee Self-Concept Scale (T.S.C.S.), the self-concept scale employed in this study.

SECTION C: OTHER PERSONALITY CORRELATES OF INTERNAL-EXTERNAL LOCUS OF CONTROL

Although most research work involving the locus of control construct have in one way or another dealt with personality

correlates of the construct (cf. Rotter, 1966; Lefcourt, 1966; Feather, 1967a; Joe, 1971; Lefcourt, 1972; Collins et al. 1973), there still arises a need in this context to look at two of them in particular, namely, conformity and social desirability

(i) Locus of Control and Conformity.

Conformity has been associated with locus of control for a considerable length of time. Reviews of relevant studies appear in Rotter (1966), Lefcourt (1966a), Joe (1971), and Lefcourt (1972). The pattern of findings in these reviews is to the effect that, whether the relationship is investigated under the term conformity (Lefcourt 1966a), resistance to subtle suggestion (Rotter 1966), reaction to social stimuli (Joe 1971) or resistance to influence (Lefcourt 1972), externals have in general been found to be consistently more conforming than internals. At first this sounds surprising since many of the characteristics of internal control, including acceptance of or conformity to societal norms would seem "desirable". But some explanation of the findings may be seen in Rotter's (1966) suggestion that internals might be more resistive to manipulation from outside if, in fact, they were aware of such manipulation. If they were aware, they would feel deprived of some of their control of the environment. Externals, expecting control from outside would be less resistive. On the other hand, if the internally oriented person perceives that it is to his advantage to conform, he may do so consciously and willingly without yielding any of his control. It is only where it might be clearly to his disadvantage that he would resist conformity pressures. These explanations found some support in Lefcourt's (1972) review in which it was deduced that internals do yield to reasoned arguments regardless of the status of the source, readily respond to directives that are in agreement with their own perceptions, and shift their own attitudes and behaviour

when allowed more active participation, as in role-playing which engenders internal self-directiveness. Under intense moral pressure, the indications are that internals would still resist the pressure to hurt another.

As Joe's (1971) review shows, however, externals too are not uniformly conforming - they conform more in response to a high prestige source than to a low prestige source. It thus appears that, while conformity remains linked to socially learned belief orientations for both internals and externals, differentiation within groups seems to be a function of the compliance conditions involved.

In a subsequent research, Oziel (1972) made further differentiations in the type of compliance by hypothesizing that internals would resist indirect but not direct demands for compliance and that externals would not resist either type of demand, complying increasingly with increasing obviousness of what is being demanded. The three measures used to assess resistance to demands for compliance were scores on the Revised Art Scale, the Remote Associates Test (R.A.T.), and the answer length to a target question on a dummy questionaire. The demands for compliance were respectively, to perform uncreatively on the two tests and to write a long answer to the target question. Equal numbers of internal and external males and females were then assigned to one of three conditions under which to take the R.A. Scale, the R.A.T., and to answer the target question in: a condition directly demanding compliance, a condition indirectly demanding compliance, or a control or standard condition.

Results with the Revised Art Scale fully supported all experimental hypotheses. Internals did score significantly more creatively in the indirect than in the standard condition, resisting the demand to perform uncreatively. They also scored least creatively in the direct condition. Externals

also performed according to prediction, scoring increasingly less creatively in each of the standard, indirect and the direct conditions. In contrast, results with the Remote Associates Test were contrary to predictions in that neither demand for compliance nor internal-external control had a significant effect upon R.A.T. scores. With answer length to the target question, the hypotheses were fully upheld with internals, but only partially so with externals.

While the results are consistent with previous findings, Oziel noted that previous findings about internals and externals responding differentially to indirect demands for compliance were only partially supported. Oziel failed to mention what sex differences, if any, were found in his study. But Ryckman and Rodda (1972) took sex differences, among other factors, into account. They assessed conformity behaviour in a modified Crutchfield situation in which internal and external undergraduates of both sexes received different levels of group support on an initial series of trials before experiencing total disagreement from group members on a second series of trials. As predicted external women conformed more than any of the other experimental groups. But contrary to expectation, internal men conformed more than external men independently of prior support level. Post-session questionaire data indicated that subjects perceived the task as primarily chance controlled, and this was, of course, against the belief orientation of internals and may have been the reason for internal men conforming more than externals who, in this case, were on familiar ground, as it were. Ryckman and Rodda themselves reported that internals were more concerned about their performance than externals, and, thus, that their conformity may have been because they were primarily concerned with meeting the task requirements. In contrast, external women were not very concerned about their task performances, but may have conformed more than other

subjects because they viewed yielding to group standards as socially desirable behaviour.

Goodstadt and Hjelle (1973) reversed the sources of influence by giving the power to influence to internals and externals. 40 internals and externals were asked to supervise three fictitious workers, one of whom presented a supervisory problem. In dealing with the problem worker, externally oriented subjects (high powerless) used significantly more coercive power (eg. threat of deduction of points, threat of firing) than did internally oriented subjects (low powerless). In addition, internals relied more on personal persuasive powers than did externals. Goodstadt and Hjelle explained the results in terms of the differential expectancy of successful influence by internals and externals. Type of supervisory problem also affected the type of power used. The findings are not only consistent with previous ones, but also suggest differences in socialization backgrounds regarding internality and externality (cf. Section D).

In line with findings that drug addicts, contrary to conventional beliefs, tend to score in the internal direction on locus of control scales, McDonald et al. (1973) found that greater drug use by female undergraduates was associated with less conformity to peer pressure, among other things.

Todate, therefore, there has been no finding contradicting the hypothesis that internals are more resistant to influence attempts than externals. Even where internals were found to conform more than externals, the factors responsible seem to relate more to the belief orientation of internals. The question is, if, as is predicted in the present study, delinquents turn out to be more external than non-delinquents, could it be said then that delinquents are more conforming than non-delinquents? The question is pertinent because, conventionally and sociologically delinquents are regarded as nonconformist vis a vis the values

and norms of the larger society. If as sociologists (eg. Yablonsky 1970, Whyte 1955) indicate delinquents are compliant toward peer and gang pressures, then a comparative study of the values and norms involved, and a differentiation of adherents on a locus of control basis may yield therapeutic fruits.

(ii) Locus of Control and Social Desirability.

Whenever questions of the measurability of personality characteristics are raised, the question of the social desirability of responses comes up as well. Edwards (1957) was one of the first to confront the problem of social desirability by attempting to devise some means of determining the social desirability scale values of inventory items. Crowne and Marlow (1960) simplified matters further by devising an adult social desirability scale independent of psychopathology. A corresponding children's scale was devised by Crandall (1965) who has herself had a long association with the locus of control construct in relationship to which the idea of social desirability is mentioned here.

To determine the social desirability content of his widely used locus of control scale, Rotter (1966) collected and published correlation indices from several studies that had related the Marlow-Crowne Social Desirability Scale to his I-E Control Scale. The correlation indices were low enough to give rise to the conclusion that the Rotter Scale is relatively free of cues to socially desirable responses. As will be seen in ChapterIII of this study, the Crandall Children's Social Desirability Scale (C.S.D.S.) was used to test the social desirability content of the Causal Attribution Scale for Children (C.A.S.C.), the locus of control scale devised for the present investigation. Mention of the relationship of social desirability to locus of control also appears in Lefcourt's (1966a) review, and as will be seen in Section H below, most of

the successive authors of locus of control scales since Rotter (1966) and Crandall et al. (1965), have taken account of the social desirability problem.

The manner of development of social desirability response tendencies, is of legitimate interest in this context. Allaman et al. (1972) administered the Crandall Children's Social Desirability Scale to 95 6 - 12 year olds in one study, and the Marlowe-Crowne Social Desirability Scale to 65 18 - 26 year old adults in a second study. Results indicated that, generally, harsh parental practices predict subsequent social desirability responding. In the first study, maternal hostility, criticism, restrictiveness, punitiveness, coerciveness, and lack of encouragement of skill development, predicted childhood social desirability among boys. Maternal hostility and criticism determined with the Parent Behaviour Ratings (Baldwin et al. 1949) were most influential when they occurred during infancy; the remaining antecedents had a stronger effect when they occurred during preschool years. In study two, the same maternal behaviours were predictive of social desirability in young men. Significant subject antecedents or correlates included imitation,conformity to parents, negative self-perceptions, traditional sex-role values, and poorer intellectual functioning. Non-compliance and dominance in infancy were unexpectedly related to adult social desirability, but a decrease in maternal involvement over the childhood years appeared to provide an explanation of these findings. In Section D (below) it will be noticed that similar parental practices tend to be associated with the development of external control orientation. It follows that if neither locus of control scale items nor subjects' responses to them are biased toward social desirability, no significant correlations should exist between an I-E scale and a social desirability scale - the reason being that while one scale (the I-E) seeks to convey a hidden control orientation

(eg. external), the other (social desirability) seeks to reveal attempts to fake such an orientation or any other enduring characteristic for that matter. A social desirability scale is in effect, a defensiveness scale (cf. Ford 1964a) and should therefore logically correlate with what Hochreich (1975) terms defensive externality as against congruent externality.

While a correlation between an I-E Scale and a social desriability scale indicates a socially desirable response tendency in subjects, nothing is indicated in such a correlation about social desirability as a variable in locus of control. Social desirability as a locus of control variable is determinable through a subject's rating of the social desirability content of each locus of control item. Bernhardson (1968) made subjects rate items of the Rotter I-E Scale for social desirability, and found a correlation coefficient of 0.82 between I-E Scale scores by the subjects and the number of external items rated as more socially desirable than the corresponding internal items. This result can give rise to two conclusions, (a) that a subject's score on the I-E Scale is predominantly influenced by his perception of the desirability of items on the scale and not by the content, or (b) that a subject rates an item as more socially desirable because he agrees with the substance of the item. To clarify the situation a bit more, Hjelle (1971) carried out a series of three investigations in which some subjects completed the Rotter I-E Scale under standard instructions while others, under similar conditions, were instructed to select the statement from each pair of alternative responses to an item, the one they thought more socially desirable, that is, the statement that would make a person look better if he were to express agreement with it.

Results from the first study indicated that a majority of Rotter's I-E Control scale items have a probability of endorsement values which depart significantly from a hypothetical

value of P = .50, both for standard instruction and for social desirability instruction conditions. The second study demonstrated a small relationship between a subjects I-E score and his tendency to agree with I-E items of high response-preference value (r = .20), where a response preference score was based on the number of items a subject selected under standard instructions which were in agreement with probability of item endorsement values exceeding P = .50. This relationship was especially obvious for subjects designated as internals. In the third study, a significant relationship was shown between the social desirability scale values of I-E items and the probability of I-E item endorsements (r = .43). Moreover, a sizeable number of internal items were rated as significantly more socially desirable than the corresonding external items. Hjelle then suggested that Rotter's I-E control scale may be contaminated by social desirability, and consequently, the validity of the scale as a measure of locus of control is questionable. This may be so. On the other hand, the ability of the scale to discriminate between internals and externals seems unquestionable, as the second of Hjelle's three studies attests to - and this is an important and useful quality. The ability to distinguish between internals and externals seems also to be the primary function of the Rotter scale, and this function seems fulfilled in the numerous studies in which it is used. Nontheless, other I-E scale constructors ought to take note of the Bernhardson and Hjelle findings, which have had support from Joe (1972). It should be noted, too, that the studies of Bernhardson (1968), Hjelle (1971) and Joe (1972), considered social desirability either as inherent in (rated) I-E item contents, or as might be perceived in those items by 'an other', not by the subject doing the rating or predicting the preferences of "an other." Rotter (1966) considered the subject as the scorer of the I-E scale items and, thus, as a

possible investor of an already existing social desirability response tendency in the scores manifested - a form of self-serving bias. From this point of view, Miller and Ross (1975) have stated that "---- research on the internal-external dimension does not provide strong evidence for self-serving biases on causal attributions." p.220.

Finally, Nowicki and Walker (1973) examined the role of social desirability as a mediator of the relationship between locus of control and achievement. 78 third graders were administered the Nowicki-Strickland Locus of Control Scale for Children and the Crandall Social Desirability Scale. Records of the performance of subjects on the Stamford Achievement Tests were also obtained. As predicted, social desirability was a significant mediator between locus of control and achievement for females. Nowicki and Walker interpreted the results within a cultural role model theory. This is consistent with the finding of Allaman et al. (1972) concerning the relationship of social desirability to traditional role values.

A new dimension of studies concerning the locus of control construct has been opened by Jahoda (1970, 1971) in his studies of the relationship of locus of control to superstition. Since superstitious beliefs can have profound effects on behaviour, further investigations of the link between superstition and locus of control as an attribution construct may yield valuable results. Another suggested area of research is that of the relationship of locus of control to Rosenzweig's (1934) types of reaction to frustration, namely, intropunitiveness, extrapunitiveness and impunitiveness. The informational value could be immense. One of the virtues of the locus of control construct is that it suggests numerous personality and behavioural correlates.

SUMMARY

The relationship between locus of control and conformity has been investigated from early days of research in the area of locus of control. There is a general consensus that the externally oriented conform more than internals. It has also been found that internals conform but only in situations consistent with their belief orientation. This raises the pertinent question as to whether the conventional view of delinquents as non-conforming has any bearings on their control orientations.

Finally, the role of social desirability in locus of control was examined. It is established that social desirability scales have the required low correlations with the well known locus of control scales. But it has also been found that, for instance, when items of the Rotter I-E Control Scale are rated separately for social desirability, the items appear to be imbued with more social desirability than would be expected. Nevertheless, this doesn't seem to reflect on the effectiveness of the Rotter Scale in distinguishing between the generally internal and external.

SECTION D: SOCIAL AND COGNITIVE FOUNDATIONS OF INTERNAL-EXTERNAL LOCUS OF CONTROL

As the first section of this review shows, there has for a long time been interest on the parts of philosophers and social scientists in the attribution and explanation of causality. In this respect, psychologists are unique in examining causal attribution in its antecedents and in its changes in the course of human socio-cognitive development. Thus Piaget (1932), Werner (1957), Heider (1958), all identified a developmental progression in psychological causal attribution from an external to an internal direction. Shaw and Sulzer (1964) provided partial support for such findings.

In consonance with the "organism-environment interaction" argument maintained in this study (cf. earlier comments on Hume's and Maine de Biran's notions of causality), Rotter et al. (1972) observed that "the unit of investigation for the study of personality is the interaction of the individual and his meaningful environment." p.4. For a developing person, that meaningful environment is normally a combination, in varying proportions, of the social environment - with significant others predominating - and the physical environment. The degree to which the individual absorbs and is absorbed by these aspects of his environment, determines first his meaning of the environment,and then his consequent behavioural responses. In their intensity and extensity these responses are measurable reflections of his meaning of the environment - a rational for the measurement of personality dimensions including internal-external control of reinforcement. For Rotter et al. (1972), "this approach to personality focuses on learned behaviour." p.4.

It seems right, therefore, to examine, within the context of social learning, the socio-cognitive abilities, efforts and beliefs that are antecedents and manifestations of internal-external control. To this end, an attempt is being made to review (i) studies that involve antecedents and aspects of the socialization of locus of control; (ii) studies that examine characteristic forms of behaviour and social status which are early indications of the direction of control orientation; and (iii) studies which examine maladjustments in and handicaps to the development of internal-external control. It is submitted, however, that the three divisions just indicated are only for the convenience of review analysis, as many studies in this area are often inclusive of more than one of these divisions.

(i) Antecedence and Socialization Related Studies

Minton's (1967) consideration of the concept of power is

worth starting with. It will be remembered that external control of reinforcement is often conceptualized in terms of powerlessness (de Charms 1965, 1968). Minton's review pinpointed a number of factors as correlates of feelings of power. For instance, evidence of a relationship between intellectual differences and power feelings was found, as was evidence that latent power and other cognitive structures can vary according to the degree of environmental enrichment to which the individual is exposed. Regarding the socialization of power, four points are particularly noteworthy from Minton's paper: first his finding that children primarily imitated a model who possessed rewarding power rather than one who was a competitor for rewards; second, his suggestion that the type of parental power utilized may be particularly relevant to the development of latent power; third, his consideration of identification with parents based on support, as a developmental antecedent to a generalized power expectancy; and fourth, the availability of empirical support for a relationship between parental training methods and power orientation in the area of socially prohibited behaviour.

Making use of the social learning theory concept of contingency of reinforcement, Moss (1967) studied the interactions of primaparous mothers and their infants at the ages of three weeks and three months, respectively, with results pointing to the fact that the concept of inter-action can be used to characterize mother-child relations even in the very early post-natal days. By promptly making her responses contingent upon the infant's signals, the mother makes those signals acquire reinforcing value for the infant. Moreover, differences in levels of activity, irritability, soothability, etc., can modify mothering behaviour and the eventual strength of mother-child attachment.

Narrowing this trend further towards locus of control,

Lewis and Goldberg (1969) studied generalized expectancy as a function of mother-child interaction. Like Moss (1967), Lewis and Goldberg proposed that prompt and contingent responses by mothers to the signals of infants, facilitate development in the infant of a generalized expectancy that his responses are capable of influencing his environment. Generalized expectancy, in turn, facilitates a more active approach by the infant to all sources of environmental stimulation thereby enchancing early cognitive development. Lewis and Goldberg found that both propositions had empirical support, provided, that is, the reinforcement took place within the very short memory span of the infant. Of importance is the fact that this stimulus response bond between mother and child develops within the infant the expectancy that his behaviour can affect his environment.

Both Moss (1967) and Lewis and Goldberg (1969) emphasized the promptness of the mother's response to the infants' signals. This implies that one source of differences between children, as far as generalization of expectancy of reinforcement is concerned, could lie in the absence, inadequacy, or ill-timing of responses from their mothers who are in these instances, the loci of reinforcement control.

A number of other studies have shown the influence of the socialization of internal-external control, and achievement behaviour. Thus, Crandall et al. (1964) and Katkovsky et al. (1964a and b), used mothers, fathers, and early school grade children in such studies and found similarities between values and standards held by parents and the values and standards by which they evaluated their children's achievement behaviours. In other words, children's beliefs in internal-external attribution of achievement behaviours, do relate to the values and standards by which parents judge achievement behaviours. The studies also showed, however, that other factors, including

age, sex, level of actual competence, etc., also influenced the responses of parents toward their children. In a further study, Katkovsky et al. (1967) correlated the generalized expectancy for control of reinforcement of 6 to 12 year old children in intellectual - academic achievement situations with the following data: ratings of mother-child interaction behaviours, interview data from mothers and fathers in respect of parent-child relationships, and questionaire data on parents' reactions to their children's intellectual achievement behaviours. Results showed that, while girls whose fathers were especially affectionate and nurturant were less prone to believe that they had caused their own failures, the general conclusion could be reached that parent behaviours characterized as warm, praising, protective, and supportive, were positively associated with children's beliefs in internal control of reinforcement. Conversely, parental behaviours such as dominance, rejection, and criticality, were negatively associated with beliefs in internal control.

Crandall and Battle (1970) chose for their study three areas of achievement in young adulthood: intellectual, vocational and academic. They found that the antecedents of adult academic effort are similar for males and females; both sexes demonstrated childhood behaviours indicating that they might have been especially sensitive to adult reinforcement behaviours, and prone to incorporate the high value for academic competence held by their parents (who were members of a research establishment) and by the general culture in which they were reared. Davis and Phares (1969) used college-age subjects and their parents in a related study and results showed that internals reported their parents as showing less rejection, hostile control and withdrawal of relations, and more positive involvement and consistent discipline than did externals. Moreover, parents whose children had an internal-external

orientation similar to their own, expressed less disciplinarian and more indulgent child- rearing attitudes than parents whose children had a dissimilar internal-external orientation.

From Lefcourt's (1972) review of studies involving familial and social origins of internal-external locus of control, the following findings are prominent and relevant:

(a) Among boys, internal control expectancies have been found to be related to permissive and flexible maternal attitudes, and to maternal expectations of early independence.

(b) Earlier born children have been found to be at least slightly more internal than later born children who were even more decidedly external than only children.

(c) Among parental attitudes, only the father's internality regarding child rearing was found to be related to children's internal-external measures: the more internal the father, the more internal the boy.

(d) Children who perceived their parents as exerting more psychological control and as being less warm and intrinsically accepting, were found to be more external.

(e) Perceived parental nurturance was found to be positively related to internality as was parental consistency in maintaining standards for children's behaviour.

(f) Class - and Caste - related disadvantages have been found to result in the development of external control - middle-class children being more internal than lower-class children.

(g) Educational level has been found to be directly related to internality.

(h) Internal control expectancies have been found to be positively associated with objective access to opportunities in a community.

In view of the above findings, Lefcourt's (1972) deduction is that empirical data regarding child-rearing antecedents of

of locus of control has tended to be consistent, such that a warm accepting home with predictable, consistent standards is more commonly reported by internal children and adolescents than their external counterparts, though expressions of parental attitudes about the same elements seem unrelated to the child's locus of control unlike the findings of Katkovsky et at (1967) that internal children shared the same values and standards as their parents in respect of the locus of control of academic achievement. In spite of this slight disagreement, it is interesting to note that much the same family circumstances found to be related to internal control orientation, were also found to be related to high self-concepts in children (cf. Coopersmith 1967, in Secion B above).

Subsequent to Lefcourt's (1972) review, Pruit (1972) set out to test the hypothesis that maternal externality and controlling, rejecting attitudes would be related to the externality and low academic achievement of black inner-city high school students. Assessment of mothers' actual child-rearing attitudes and students' perceptions of those attitudes, was based on an analysis of the following factors: Authorian - Controlling, Hostility - Rejecting, and Democratic factors. The Parent Attitude Research Inventory (P.A.R.I.) and the Rotter I-E Scale were administered. Results showed that internal males estimated mothers'P.A.R.I. to be significantly higher on Democratic Attitudes than did external males. Estimates of P.A.R.I. given by external females were significantly higher on Authoritarian Control and on Hostility-Rejection, than were estimates given by internal females. Regarding mothers' actual P.A.R.I. and Students I-E control, it was found that P.A.R.I. scores of mothers of external males were significantly higher on Authoritarian-control than scores of mothers of internal males. P.A.R.I. scores of mothers of external females were significantly higher on Authoritarian-Control and lower on Democratic attitudes

than scores of mothers of internal females. Finally, a significant relationship was found between mothers' I-E control and students' I-E control. Thus, in concert with previous studies, Pruit's investigation shows that parental authoritarian control untempered with democratic attitudes, is likely to bring about external control orientation in children.

Jorgenson (1972) compared Southern and Northern black American high school students in terms of I-E beliefs and socialization values. The findings were that maternal socialization values influenced the students' sense of personal control more than their locus of control ideologies in the north, but that no such influences were noticed in the south. Moreover, in the north, early sex-role appropriate achievement expectations had the strongest influence. Males and high socioeconomic status students had higher senses of control than others. For Jorgenson, these results suggested that the sense of personal control is determined by social rewards and socially appropriate behaviour and that high prestige groups have higher senses of personal control because they have greater access to social rewards in the course of their development.

Exploration of the possible antecedents of locus of control was also the direct aim of Samson (1972). His subjects were psychiatric patients. From Rotter's I-E scale scores and other questionaire data, it emerged that the religious preferences and attitudes of both father and mother are important factors in the formation of an internal or an external frame of reference. More Catholics than people of other religious persuasions scored externally. In relation to the stability of the home environment, the conclusion was that when family relations are marked by a lack of harmony and exhibit fighting, conflict and tension, children are more likely to develop external control orientation than would otherwise be the case, perhaps as a defence against such aversive circumstances (and hence, perhaps, the

phenomenon of defensive externality, Hochreich, 1975).

The perceived instrumentality of others in influencing internal-external control, was investigated by Chabassal (1973) who found that adolescents who saw themselves as receiving much structuring from adults also obtained higher external control scores. Levenson (1973) analysed Rotter's I-E scale into three dimensions - expectation of internality, control by powerful others, and control by chance forces - and found that male undergraduates perceived internality in relation to maternal instrumental behaviour. For females, internality was negatively related to maternal protectiveness. Subjects who reported that their parents used more punishing - and controlling - type behaviours, were found to have greater expectations of control by powerful others, while subjects who viewed their parents as using unpredictable standards, had stronger chance control orientations.

Nowicki and Segal (1974) found that perceived paternal nurturance was associated with female internality. This seems consistent with Levenson's (1973) finding that female internality was negatively associated with maternal protectiveness - assuming, of course, that protectiveness subsumes nurturance or vice versa; and if one subsumes the other, then it can be said that the young female person reacts differentially to both parents as sources of protectiveness/nurturance. More interesting still, Nowicki and Segal found that perceived maternal nurturance was associated with male internality. (It is difficult to tell whether good old Oedipus complex is operating under the guise of protectiveness/nurturance!). However, Yates et al. (1975) found no evidence that a warm, loving and nurturing parent-child relationship was predictive of an internal locus of control orientation on the part of the child. They went on to explain that "the apparent discrepancy between this result and previous findings (Nowicki and Segal 1974) may be resolved by

simply noting that a loving, warm parent-child relationship independent of contingent parental punishment may not produce an internal locus on the part of the child, but, as the present study indicates, a warm and loving parent-child relationship seems frequently to be part of a context of contingent parental punishment." p.146. Other results from Yates et al. were that subjects with an internal orientation perceived their parents as contingently punishing. Parental punishments perceived as independent of the child's misbehaviours were related to an external locus of control on the part of the child. These findings held most clearly for males and fathers. Rather than contradicting as such the previous deduction that democratic parent-child relationship tempered with firm control conduces to internality, the Yates et al. conclusions support it.

A further advance in the search for the antecedents of locus of control was made in the study of role-taking. Silbereisen et al. (1975) studied role-taking ability in West Berlin elementary school children as a function of the school's socioeconomic background, the child's internal control score, and the child's perception of maternal support and control. With intelligence held constant, internal control and maternal support/control interacted with socioeconomic level of the child's environmental setting, to affect his role taking ability.

Studying 4th and 5th Grade boys and their mothers and fathers in interaction, Loeb (1975) found support for a role complementary model of locus of control development. External sons more frequently had highly directive parents, while internal sons more frequently had less directive (suggestive) parents. These differences were somewhat clearer with mothers than with fathers, an indication of more marked interactions with mothers than with fathers.

Consideration of the factor of age is inevitable in studies of the socialization of any personality characteristic.

Regarding locus of control, there now seems no doubt that most people become more internal the older they are. Recently, Whiteman et al. (1974) developed a model for specifying relations between the perceived properties of an act (its instrumentality and its consequentiality) and the intentionality attributed to the act. In judgments of intentionality by 1st to 4th and 6th graders, the authors found that the older subjects adhered more closely to Heider's (1958) naive psychological model both in their attribution of intentionality and in the reasons for their attribution. And basically, Heider's model has it that we take into account information regarding the strength of environmental forces in deciding whether or not the other caused the effect, and we then infer both how able he is and how hard he was trying in the circumstances. The first graders had difficulty judging intentionality as compared to consequentiality. In effect, the younger subjects were not as circumspect in their attribution of intentions as the older subjects were. Pawlicki (1974) recorded a developmental trend in increasing feelings of control over the environment with increased maturity among children in grades 3, 4, 6 and 7. Ryckman and Malikiosi (1975) studied the relationship between locus of control and chronological age, in an attempt to replicate and extend the findings of Lao (1974) which indicated an increasing sense of personal efficacy from youth to adulthood, a stabilized sense of internal control through middle-age and no decrease in internality among elderly subjects. Ryckman and Malikiosi found Lao's findings generally replicated in their samples of 100 college students and 383 adults. In addition, they found that elderly subjects believed they were personally competent, and not at the mercy of powerful others or a capricious environment.

Falbo (1975) turned to Kindergarteners and attempted to determine whether they had consistent preferences in explaining situational outcomes and whether these preferences were related

to variables associated with achievement motivation. He found that attributional preferences were related to home environment and I.Q. There were differences between high and low I.Q. groups in citing intelligence and ability as explanations for successful outcomes.

Apart from the strong maternal/familial influences on the socialization of internal-external control which many studies have shown, the Kibbutz as an influential socialization milieu was studied by Lifshitz (1973). Although 62 of her 183 subjects were considered "problematic," Lifshitz found that differing mental health status and sex did not affect responses to the questionaires used. On the other hand, responses varied significantly as a function of (a) age, with a gradual increase in self-crediting and self-blaming responses; and (b) having been reared in different (three) Kibbutz movements. Moreover, subjects reported having more control over results as they were probably given more freedom and responsibility to conduct their own affairs.

(ii) Behaviour and Status Related Studies.

Inseparable from the role- and age- related factors in the socialization of internal-external locus of control, are correlative and characteristic forms of behaviour which are early indications of a subject's control orientation. It is apparent from Rotter (1966) and others, that the concept of internality incorporates the ability to recognize the utility of working and waiting for larger rewards. A number of studies have dealt with the antecedents of self-imposed delay of rewards (Mischel 1966), and the actual ability to delay on the part of developing children (Mischel and Staub 1965).

Mischel (1966) had a programme for investigating delay of gratification by studying direct manifestations of delay behaviour. With samples of West Indian and U.S. elementary

school children, he was able to give substance to the general hypotheses that (a) delay responses are relatively consistent; (b) delay responses (like internal control orientation) tend to increase with age; and (c) delay responses are systematically related to other theoretically relevant variables usually subsumed under "ego strength" constructs. Turning to more specific hypotheses, Mischel, in a series of experiments, used live and symbolic adult models, child observers, and child transmitters of behaviours learned formally and incidentally from models, to investigate antecedents of self-imposed, model-imposed, and voluntary delay of rewards of varied values to the children. The key results in respect of antecedents were: (a) that rewardingness and power of the model were the two variables that determined the degree to which his behaviour was adopted (in line, it seems, with Minton's (1967) finding, above, that children primarily imitated a model who possessed rewarding power); the behaviours of the rewarding model with high control over the child were learned to a greater degree than those of the model with low rewardingness and control; and (b) that the characteristics of the model might affect the degree to which his behaviours were learned by the observer, presumably by affecting the degree to which the observer attended to them.

On actual ability to delay gratification, Mischel and Staub (1965) administered a measure of generalized expectancies for success to 8th grade boys. Three weeks later, these subjects worked on problems and obtained either success, failure or no information. After these treatments, subjects were asked to choose between immediate, less valuable, and non-contingent rewards. Results showed that contingent rewards were chosen more after success than after failure, and that subjects discriminated between specific contingencies. The effects of situational success tended to minimize the effects of generalized expectancies. In the no-information condition, children with

generalized expectancies for success chose more contingent rewards than those with low expectancies, and behaved like subjects in the success condition. Children with low generalized expectancies who received no information about their performances behaved like those with similarly low expectancies who had obtained failure. Following failure, generalized expectancies for success affected willingness to wait for larger rewards even when their attainment was independent of performance.

After considering a number of studies of the ability to delay reinforcement as a correlate of internal control, Rotter et al. (1972) made the inferential statement that "young children tend to prefer an immediate reinforcement over a delayed one, even though the latter may have greater value. Similarly, certain groups such as various psychopathic, criminal or juvenile delinquent, and neurotic types may show analogous preferences. Various disadvantaged subcultures, as well as more primitive groups, may behave similarly. All of these results indicate that time, in and of itself, is not the crucial variable. That is, the child, primitive adult, or delinquent may choose the immediate gratification, not because it is more valuable but rather because he has a relatively low expectancy that the promised larger reinforcement will actually occur at a later date. In effect he has learned not to trust the future but to rely on the present.

"The implications of this statement regarding delay of reinforcement are of particular importance in the practice of clinical psychology. For example, many deviant behaviours may be construed as situations in which a patient chooses immediate gratification of lower reinforcement value (avoidance of any unpleasant situation) as compared to choosing a later, more valuable gratification which could occur were the patient to give up so-called symptoms." p.23. These inferences by Rotter et al. have implications for the problems of handicap and

maladjustment as these affect the development of internal-external locus of control. The next subsection will examine the problems.

Meanwhile a study of delay of reinforcement among delinquents deserves mention. Davids and Falkof (1975) obtained measures of time orientation and delay of gratification from 40 male and female delinquents institutionalized in (1974). Similar measures were available from studies of delinquents by Davids et al. conducted in the same institutions in 1959. Assuming that within the 15 years, 1959 to 1974, great social changes especially among the young, had taken place, the authors proceeded to compare the two samples. Detailed analysis showed that older subgroups showed more future orientation than younger subgroups, and this was in line with the "theoretical expectation that with increasing emotional maturity one becomes less oriented to the immediate situation and more concerned about the future." p.162. Girls were more ready to save money (delay reinforcement) for the future than were boys. Older subjects were also more ready to save than younger ones, a finding consistent with previous ones that "there is an increasing tendency with increasing age to forego immediate gratification in preference for some ultimately more valuable delayed reward." p.162. A comparison of 1959 and 1974 delinquents showed that, in general, the 1974 delinquents appeared to be more impulsive, present rather than future oriented, and in greater need of immediate gratification than were the 1959 delinquents. Two facts in particular convinced the authors of the undesirable effects of social changes within the 15 year interval. The first was the fact that in 1959, no subjects wanted to spend their reinforcements (money) on drugs, whereas in 1974, frequent references were made to spending the money on drugs. Secondly, in 1959 references were made to helping other people, eg. giving the money to help the mother,

whereas no such references were made in 1974. Thus the delinquents of 1974 appeared to be much less well adjusted, psychologically and socially, than those of 1959.

Other behaviour related studies to be included here have to do with task independence and with judgment of intention. Regarding task independence, Bothnelli and Weizmann (1973) administered the Gruen-Korte-Stephens (1974) locus of control scale to 48 male and female second graders who were also tested for the amount of help-seeking imitation they would exhibit in the course of task performances. Findings, in addition to sex differences in help seeking (females sought or accepted significantly more help than males), showed that internal males imitated the experimenter's behaviour more than external males when the behaviour was instrumental in task performance, but less when the behaviour was irrelevant to the task. And, regarding judgment of intention, Whiteman et al. (1974), as mentioned earlier, found that the older the subject the more the adherence to Heider's model of attribution.

Regarding status and the development of internal-external control of reinforcement, Aronfreed (1961), for instance, found support for the hypothesis that high status or power within the social structure would provide greater reinforcement for internal control in that middle-class children and boys would show more orientation toward internal monitors than would working-class children or girls. Minton (1967) in his review of power as a personality construct found Aronfreed's findings consistent with the general finding that individuals who are low on the social structure tend to have feelings of external control.

Commenting on the role of low socioeconomic status in inducing external orientation, Rotter (1966) stated that the perception of limited material opportunities and of powerful external forces, is one variable making for an external

attitude. Gable and Minton (1971), studying social class, race and the beliefs of junior high school children in personal control, found significant differences in internal-external control between schools in poor and blue collar neighbourhoods, but not between social class and race. Bartel (1971) also found that lower- and middle-class subjects did not differ significantly on locus of control in grades 1 and 2, but by grades 4 and 6, the differences had reached significance, suggesting that social class status makes for differences in locus of control because the necessary stimulation towards internal orientation continues to receive encouragement and to increase with age among the middle classes but stagnates after a time among the lower classes.

Buck and Austrin (1971) investigated school achievement in relation to locus of control among 8th grade economically disadvantaged Afro-Americans categorized as adequate achievers and under-achievers. Maternal attitudes were also ascertained. Adequate achievers were found to be more internal than under-achievers, and rated as more positive and less deviant in classroom behaviour. Mothers of adequate achievers tended to report few negative responses and to rate their children as more competent. However, mothers themselves did not differ in minimal standards or in attainment values. Explaining their findings in the light of social learning theory, the authors stated that underachievers and adequate achievers were presumed to have been differentially rewarded by parents, teachers and other significant persons.

Stephens and Delys (1973) compared internal-external expectancies of dis-advantaged pre-school children in "Head Start" classes with those of middle-class children in a Montessori and two parent co-operative nursery schools using the Stephens-Delys (1973) Reinforcement Contingency Interview. The middle-class groups had significantly higher internal control

scores than did "Head Start" groups but did not differ from each other; and the black and white "Head Start" groups did not differ significantly from one another. The authors concluded that the external control expectancies of both black and white disadvantaged children appear to precede their school attendance, a reference to the established powerful influence of the familial environment.

(iii) Handicap and Maladjustment Related Studies

With delinquent groups as experimental subjects, consideration of the interplay of maladjustments and the development of internal-external control should be helpful. From studies by Sears et al. (1957) Bandura and Walters (1959), Allinsmith (1960) and Aronfreed (1961), Minton (1967) found empirical support for a relationship between parental training methods and power orientation in the area of socially prohibited behaviour. The same group of researchers also found a relationship between the internal versus external orientation of parental discipline and parallel differences of orientation in children's responses to social transgression. However, from an assumption of deviant behaviour as learned, purposive, goal-oriented and adaptive, Jessor et al. (1968) studied the differential rate of occurence of deviant behaviour among the adults and high school students of a tri-ethnic community, but failed to find a predicted relationship between internal-external control and proneness to deviance.

On the other hand, Tuft and Dana (1973) who used male delinquents to study the effects of locus of control of reinforcement on token economy performances, found that some performance variables were moderately predictive of internal-external control for whites, and that blacks and whites differed on demographic and personality variables. These results were attributed to both the demand characteristics of token economy and to social biases in the opportunity structure. Harris

and Nathan (1973) provided further support for the relationship of locus of control to factors of delinquency by reporting that in regard to clinically assessed problem children, parents who regarded their children's problems as arising from sources external to parental control, had significantly higher external control scores than parents who regarded their children's problems as related to parental behaviour. A fuller examination of the relationship between locus of control and delinquency will be made in Section E below; for now suffice it to indicate something of the developmental background of deviants in relation to locus of control.

Regarding physical handicap and locus of control, Eggland (1973) compared children with cerebral palsy to non-handicapped children. Initial results showed the handicapped children to be more externally controlled than the normals, but scores became more internal with increasing age in both groups. Eggland concluded that changing the expectancy level of children with physical handicaps may be a useful factor in their acceptance of disability and in their progress in rehabilitation. Much the same could be said of socio-emotionally handicapped children in respect of modifications in undesirable forms of behaviour.

SUMMARY

In this section, an attempt has been made to review literature relating to the socio-cognitive foundations of internal-external locus of control by grouping relevant studies into antecedence-related, behaviour- and status - related, and handicap/maladjustment - related units. This was done for convenience and clarity, even though a certain degree of overlap with other sections could be noticed.

There is overwhelming evidence of parental - especially maternal - influence on children's growing sense of control orientation. A number of studies have indicated that parental

characteristics such as suggestive rather than authoritarian directiveness, clarity of purpose, and strictness tempered with freedom of manoevre, are related to the development of internal control orientation. On the other hand, the relationship of children's control orientations to parental characteristics such as protectiveness/nurturance, appears to be a matter of interaction between the sex of the parent and the sex of the child. There is strong evidence also for the increase in internal control orientation with age and cognitive maturity.

In the realm of behavioural manifestations of control orientations, it seems that behaviours such as ability to delay and actual delay of gratification, task dependence (help-seeking behaviour) and the attribution of intentions, are predictive of control orientation in normal, socioeconomically disadvantaged, as well as in maladjusted children. Low social status also goes with external control orientation. Socio-personal maladjustment seems to share its developmental background with external control orientation. Finally, there is an indication that the physically handicapped can grow in internal control and that this may help acceptance of disability as well as rehabilitation.

SECTION E: INTERNAL-EXTERNAL LOCUS OF CONTROL IN THE CONTEXT OF DELINQUENCY AND RELATED PATHOLOGIES

This section is, in a sense, an extension of the definitional and etiologic issues related to delinquency as considered in the introductory part of this study. Those studies that directly and indirectly relate problems of delinquency and related pathologies to internal-external locus of control are examined here. Pathologies regarded as related (or possible of relation) to delinquency include emotional disturbance and

retardation, psychiatric problems other than delinquency, and drug, alchol and nicotine addiction.

(i) Locus of Control in the Delinquent.

Before the publication of Rotter's (1954) "Social Learning and Clinical Psychology" in which the locus of control construct was embedded, Reiss (1951) was already examining the subject of delinquency as the failure of personal and social controls. Although Reiss conceived of personal and social controls in the sociological sense of the influences of primary and secondary group values and norms as factors in the control of behaviour, his conception of the term 'control' seems at least theoretically related to Rotter's conception of internal-external locus of control. For one thing, the basis of both conceptions of control is social learning subject to the socializing influences of both primary and secondary groups. Reiss' contention is that it is the ineffective inculcation and the ineffective learning and use of the values and norms of society that is at the root of certain forms of delinquent behaviour such as recidivism. As Reiss put it: "delinquency results when there is a relative absence of internalized norms and rules governing behaviour in conformity with the norms of the social system to which legal penalties are attached, a breakdown in previously established controls, and/or a relative absence of or conflict in social rules or techniques for enforcing such behaviour in the social groups or institutions of which the person is a member. Hence delinquency may be seen as a functional consequence of the type of relationship established among the personal and social controls." p.196.

Reiss sought to isolate a set of personal and social controls associated with delinquent recidivism and to evaluate these as prognostic of recidivism. To this end, he paid attention to three sources of control - the primary group, the community and its institutions, and the person. Primary "groups exercise

exercise social control over the non-delinquent child by providing non-delinquent social roles and employing techniques which make non-delinquent norms and rules effective. Concomitantly, the non-delinquent child develops contra delinquent personal controls in primary groups. Delinquency and delinquent recidivism may be viewed as a consequence of the failure of primary groups to provide the child with appropriate non-delinquent social roles and to exercise social control over the child so these roles are accepted or submitted to in accord with needs." p.198.

Reiss' empirical data showed (a) that delinquents from families where there were formal breaks in structural unity as revealed, for instance, by the marital status of parents, tended to be more often recidivist than delinquents whose parents were living together; and (b) that delinquents from families with unfavourable moral ideals and/or techniques of control were more often recidivist than delinquents from families with favourable moral ideals and/or techniques of control. Moreover, delinquents from economically deprived and dependent families seemed to be weaker on controls and more likely to be recidivist delinquents. Children who spent part of their childhood in institutions were observed to be less able to control their own behaviour and accept the control of other social institutions than the family child of equivalent age. "----- the institutional child is usually in an environment of depersonalized norms and rules where the primary relationships and controls of the family are absent. These children not only feel manipulated by the impersonal milieu but usually fail to accept the norms and rules of the institution as personal controls. This does not necessarily mean open conflict with institutional authorities. It may mean submission to institutional authority." p.199. Reiss' data on the effects of institutionalization showed that delinquents who had

experienced institutional placement were significantly more often recidivist than children who had no such experience.

Regarding the community and its institutions as sources of control inculcation and acquisition, Reiss' data showed that, generally, delinquents in residential areas where contra delinquent institutional controls were presumably strong, were more successful on probation than those in poorer residential areas. In relation to community institutions such as schools, data showed that truants were more often recidivist than non-truants. And, within the classroom situation delinquents rated as of poor comportment had significantly higher failure rates on probation than those rated as of fair, good or excellent comportment.

Reiss characterized those who possess personal control over their behaviours as (a) those with mature ego-ideals or non-delinquent social roles, and (b) those with appropriate and flexible rational behavioural control which permits conscious guidance of action in accord with non-delinquent group expectations. His data indicated that recidivist delinquents were weaker in these two characteristics than non-recidivist delinquents.

Referring to his aim of isolating predictors of recidivism, Reiss observed that his results suggested "that efficient prediction of delinquent recidivism is obtained when we use items as predictors which are measures of the adequacy of personal controls of the individual and his relation to social controls in terms of the acceptance of or submission to social control" p.206. Those familiar with the locus of control construct can infer from Reiss' conclusion that it is possible to devise a locus of control scale that is both specific to Reiss' meaning of personal and social controls and predictive of recidivism. More will be said about specific scales of that nature in Section H below, as it seems that such scales would

immensely aid the effort to apply the locus of control construct to many problems especially those (like delinquency and recidivism), connected with social learning and personality development.

Seeman (1963), who has had early associations with the locus of control construct (cf. Rotter, Seeman and Liverant 1962), regarded powerlessness, expectancies for control and alienation, as aspects of a single learning theory construct, and then proceeded to show that in a reformatory setting, the learning of information relevant to the parole of inmates was dependent upon the degree of feelings of powerlessness (external control) or alienation by the inmates. Seeman's essential prediction was that inmates scoring low on powerlessness (internal) would show superior retention of material relevant to parole, since this material most clearly implied the possibility of personal control over events. Findings confirmed the prediction. Furthermore, the superior learning ability of the unalienated prisoners was shown to be associated with achievement-oriented behaviour within and without the reformatory. Thus, whether it be the acquisition of personal and social controls (Reiss 1951), or the learning by adult prisoners of information relevant to parole (Seeman 1963), the advantage seems to lie clearly with those offenders who believe in their ability to control event outcomes, that is, those with relatively little feelings of powerlessness. Later, Rotter (1966) was to hypothesize that those who view reinforcements as contingent on their own behaviour are better adjusted than those who see reinforcement as determined by chance, fate, or powerful others.

Subsequent research gave general support to Rotter's hypothesis. For instance, Hersch and Scheibe (1967) found that the internal-external control scale had consistent relationships to measures of maladjustment, with internal scorers appearing less maladjusted. And Warehime and Foulds (1971) put things the other way round by reporting that a positive relationship

exists between internality and general personal adjustment. Further demonstrations of such relationships may be found in Platt and Eisenman (1968), Crego (1970), and Wall (1970).

Cross and Tracey (1971) examined more specific personality factors in delinquent boys. 119 boys who were either institutionalized or in active contact with juvenile courts, were classified into interpersonal maturity categories. Apart from locus of control, future time perspective, legal status, socioeconomic status, intelligence, age and aspects of guilt were assessed. Inter-personal maturity was directly related to internal locus of control for the whole sample while future time perspective and guilt were not. In terms of race, however, interpersonally mature black delinquents were more external and had shorter time perspectives, whereas interpersonally mature whites were more internal but with time perspectives no different from immature delinquents. Cross and Tracey saw these results as suggesting that the acquisition of inter-personal maturity is related to the expectation of rewards (opportunities) and suppression by society. The damage resulting from this situation was seen as having differential effects on black and white male delinquents. Another delinquent personality characteristic, namely, impulsivity, was studied by Marohn et al. (1971) who found that in some impulsive delinquents, internal awareness of their intrapsychic inability to control and modulate impulses was blocked and was projected onto the outside world; it was experienced as a feeling of doom or helplessness about the future.

Jessor et al. (1972) found that a substantial departure from balance in a structure of needs or motives, was found to be associated with a higher level of maladjustment even in non-delinquents. White (1973) studied a different sort of need structure, namely, self- and experimenter- regulation of contingencies under reward and punishment conditions. Delinquent subjects were categorized before hand as either

internals or externals. Reward was defined as administration of positive reinforcers and punishment as removal of positive reinforcers. Subjects were then asked to participate in a paired associate verbal learning task measures of which included the number of correct responses as well as accuracy in estimating actual performance levels for self-regulated conditions. The following three hypotheses were upheld: (a) that internals would perform significantly better under self-regulated conditions than under experimenter-regulated conditions; (b) that externals would perform significantly better under experimenter-regulated conditions than under self-regulated conditions; and (c) that internals would estimate their performance levels more accurately than would externals. In addition, while internals performed generally better than externals, all subjects performed more efficiently and made more accurate estimates of their performance under reward than under punishment conditions. White's study shows, among other things, that the differentiation of delinquents into internals and externals may help the treatment of delinquents especially since research has shown the locus of control construct to be related to many learned and learnable social, personality and performance variables. This is especially so since Eitzen (1974), for instance, has found that in a treatment setting in which token economy was used, the post-treatment test scores of juvenile delinquent boys were significantly more internal than their pretest scores.

Segal and Du Cette (1973) focused on delinquent girls. Since society often considers the premaritally pregnant school girl as, a priori, delinquent, the authors investigated a predicted relationship between premarital pregnancy and locus of control in junior and senior high school girls in one middle-class white and one lower-class black schools. No significant differences were found between schools in mean scores on the Rotter I-E Control Scale. However, partial support was found

for the predicted relationship between premarital pregnancy and locus of control. Within the middle-class school, non-pregnant girls were more internal than pregnant ones. But within the lower-class black school, pregnant girls tended toward internality and non-pregnant ones toward externality. These intriguing results were considered consistent with the sense of and belief in locus of control prevalent in the two environments.

Black and Blankenship (1974) tested the utility of Rotter's social learning theory in predicting the form of delinquency - sexual or non-sexual - in institutionalized and normal girls. Data supported the hypotheses (a) that sexually delinquent subjects would place high reward value on love and affection and have low expectancy for attaining these, and (b) that normals would not be significantly low on reward value or expectancy for either love and affection or recognition status.

Finally, the effect of institutionalization was examined in isolation by Landau (1975). She investigated the assumption that both delinquency and institutionalization independently have a limiting effect on range of future time perspective - a correlate of locus of control (cf. Shybut 1968). She assigned a total of 171 male Oriental Jews of low educational and socio-economic levels to four main groups: an institutionalized delinquent group (prisoners) and institutionalized non-delinquent group (soldiers), a non-institutionalized delinquent group (delinquents on probation), and a non-institutionalized non-delinquent group (vocational students). Her hypotheses were upheld: prisoners showed the shortest time perspective, while vocational students showed the longest. The future time perspective of the soldiers and the probationers was longer than that of the prisoners but shorter than that of the vocational students. Moreover, within the army and the prison, the range of future time perspective shortened as the subject approached release.

The above findings relating to locus of control in the

delinquent carry interesting implications for both psychopathology and psychotherapy. It was in regard to such implications that Lefcourt (1966) argued that if internal control expectancies were prerequisite for effective behaviour, then plausible hypotheses could be advanced in respect of various pathologies; eg. delinquency. Assuming delinquency to be a predominantly lower class phenomenon, Lefcourt held that delinquency might reflect a lower-class youth's disbelief that he can successfully perform middle-class tasks eventuating in middle-class goals. Lefcourt claimed empirical support for his view from Sherif and Sherif, (1964) who found that differences between middle-class, lower-class and delinquent groups predominated in the area of expectancies above all others. And, with experimental intervention, Sherif and Sherif found that delinquent groups ceased acting in an anti-social manner when more socially acceptable avenues for goal achievement appeared to have a greater probability of success. Lefcourt (1966) then concluded in regard to psychopathology that "---- many forms of deviant behaviour recognised as symptoms of psychopathology may profitably be described as resulting from a disbelief that efforts to behave in socially constructive, approved ways would be successful. This is not to say that locus of control provides a singular, simple, causal explanation for incompetence. Rather locus of control may be one of several necessary correlates of competence." p.191. More about the applications to psychopathology of Rotter's (1954) social learning theory in general and the locus of control construct in particular, can be found in Rotter et al. (1972), as can implications for psychotherapy.

In connection with the latter, Lefcourt (1966) stated: "since an internal locus of control may be one prerequisite of competent behaviour, and an external control orientation seems common to many people who do not function in a competent, 'healthy' manner, it would seem that perceived control should

have some importance as a goal for psychotherapy." p.191. This was the background from which Reimanis (1974) investigated the hypothesis that internal control can be increased by application of behaviour modification techniques in early graders, and by special counseling efforts to strengthen verbalization of internality in college students. Data supported the hypothesis: subjects increased in internality after three months of counseling, and achievement motivation training was followed by immediate and long-range increases in internality for male undergraduates. But initial increases for female undergraduates dissipated after six months.

Finally, a dimension of the study of delinquency that has been neglected but which deserves much more attention, is the relationship between locus of control and the type of offence committed by a delinquent. It is an area that seems to possess potentials for therapeutic purposes. An example, not connected with locus of control, but valuable for the suggestive lead it provides, now follows. In their "Psychiatric Studies of Borstal Lads," Gibbens et al (1963) examined the official criminal records of the lads and supplemented these with interviews with the lads and with confidential information, where appropriate, from local authorities. This method yielded information about offences relating to violence, sex and property; more importantly, Gibbens et al examined in more detail the psychological aspects of a single offence - theft. Thus, thefts were found to be committed in the course of marauding when opportunity offered itself, and there were thefts for comfort - a substitute for parental affection, thefts to prove toughness or manliness, and planned or secondary thefts. Since locus of control is a causal attribution construct, it could be used in its

specific characteristic to, indirectly, investigate the causal locus of specific criminal tendencies in delinquents as a prelude to treatment.

(ii) Locus of Control in the Emotionally Disturbed and the Retarded/Subnormal

Problems of emotional disturbance and metal retardation often interact with problems of delinquency. Accordingly, the few studies that have related these pathologies to locus of control deserve examination. Bialer (1961) set out to establish (in contrast to previously held assumptions) that not all children, but only those who can conceptualize the relationship between their performance or ability and the outcome of their goal directed behaviour, can be aware of success and failure. He tested this formulation in mentally retarded and normal children, postulating that mentally retarded children do not differ qualitatively from normals in the development of the ability to conceptualize success and failure but that this ability develops more gradually in the retarded. Among the three measures used by Bialer was his verbally administered locus of control scale (cf. Section H). Findings showed that with increasing age there was a significant tendency among his subjects - regardless of retarded/normal classification - (a) to perceive internal locus of control, (b) to respond to success-failure cues, and (c) to delay gratification when such delay led to the eventual attainment of a larger reward.

Cromwell (1972) also examined success-failure reactions in mentally retarded children, defining success and failure in such a way that internality became the criterion for judging both. His hypotheses regarding the child's ability to increasingly see the instrumentality of behaviour in event-outcomes with increasing age, and the child's tendency to opt for non-hedonistic outcomes with the development of success-failure conceptualizations, were upheld.

In the school setting, Fox (1972) underscored the findings of Bialer (1961) and Cromwell (1972). She found that retarded children were more external than average children of the same chronological and mental ages, but that this was due to the retarded children's greater number of failure experiences. There is the implication here that the retarded child can have a healthy conceptualization of success and failure and,therefore, become increasingly internal in control orientation if undue emphasis is not placed on failure outcomes.

Stern (1973) studied behavioural correlates of locus of control in emotionally disturbed children. After administering a locus of control measure, Stern measured the effectiveness of controlling the environment by response patterns in an operant conditioning experiment, and found, contrary to expectation, that externals extinguished faster on operant tasks than internals. Still within the context of learning Wooster (1974) tested the hypothesis that mentally retarded children educated in an informal school offering opportunities to choose and to experience the outcome of choice, in a supportive atmosphere, would be able to accept more responsibility for their own successes and failures. Two matched groups of 20 subjects were treated in formal and informal conditions respectively. Comparison of measures of locus of control and reading ability, gave support to the hypothesis.

Finch et al. (1974) investigated the relationship between

the cognitive dimension of reflection - impulsivity and locus of control in emotionally disturbed boys using the Nowicki - Strickland (1973) Locus of Control Scale for Children, and found no support for the hypothesis that reflective subjects would be more internal than impulsive ones. But when Montgomery and Finch (1975) changed to a scale called the Locus of Conflict Rating Scale, and then proceeded to study the relationship once more, they found impulsive subjects to be externalizers and reflective ones to be internalizers. This could be a question of the right locus of control scale for the right issues. When Finch et al. (1975) used the Nowicki-Strickland scale to study locus of control and academic achievement in emotionally disturbed children, they found that those emotionally disturbed children who perceived a relationship between their own behaviour and resulting consequences, obtained higher achievement scores than those who did not.

Finch and Nelson (1974) studied locus of control and anxiety in emotionally disturbed children, using two locus of control scales and two anxiety scales. Results showed that whether locus of control was related to anxiety depended on the measure of anxiety employed. The significant negative correlation found between internal locus of control and anxiety in emotionally disturbed children, supported previous findings (Watson, 1967; and Ray and Katahn, 1968) that a feeling of lack of control over the environment and the outcome of one's actions are associated with anxiety.

Zern et al. (1974) studied cognitive style and overt behaviour in emotionally disturbed adolescent residents and outpatients of a private mental hospital and obtained a significant mean difference on the cognitive style dimension between subjects classified as externalizers and internalizers. Mention of mental hospital patients leads us to other studies of psychiatric patients.

(iii) Locus of Control in other Psychiatric Patients.

Cromwell et al. (1961) had found that in a comparison of the locus of control scores of schizophrenics and normals the former were significantly more external than the latter. While normals did better in and preferred situations of autonomy, the schizophrenics did better in and preferred experimenter controlled conditions. Cromwell et al. then raised the question as to whether external control response relates to etiological or to secondary factors in the complex problems involved in schizophrenic pathologies. The same question was later raised by Samson (1972).

Shybut (1968) found that psychotic subjects had significantly higher external scores than normal and neurotic subjects. He suggested that prolonged hospitalization may be responsible for reducing an individual's belief in obtaining long-range goals and may accordingly increase his belief in external control.

In a study of self-presentation in mental illness, Fontana et al. (1968) found that schizophrenic patients seeking to impress upon others that they were healthy, were more internal than those who sought to impress upon others that they were "sick". Harrow and Ferrante (1969) paid particular attention to the within-psychiatric-patient group differences in locus of control and found that schizophrenics were more external than the total sample of non-schizophrenics. After a six-week period of treatment, while depressives were becoming more internally oriented, schizophrenics and patients with manic disorders were becoming more externally oriented.

Palmer (1971) found support for the hypothesis that, as compared with that of a patient hospitalized for non-psychiatric reasons, the psychiatric in-patient's poorly developed sense of his own identity would lead him to perceive reinforcement as contingent primarily upon some external locus of control, rather than upon his own relatively enduring personal characteristics.

The familial root of the externality of Palmer's subjects appeared in the further findings (a) that psychiatric patients perceived their mothers as less emotionally supportive and warm, relative to non-psychiatric patients, ($p<.01$) and (b) that there was a tendency for paternal supportiveness and warmth to be differentially perceived by psychiatric and non-psychiatric patients.

Regarding anxiety, Butterfield (1964), Liberty et al. (1966) and Tolor and Reznikoff (1967) have indicated that externality relates positively to debilitating rather than facilitating types of anxiety, and Feather (1967a) reported a tendency for externals to be relatively high in anxiety and neuroticism. Joe (1971) has called for a study of the problem as to whether belief in externality produces anxiety or vice versa.

Abramolvitz (1969) found, in a test of the hypothesis that depression is associated with external control, that depression is indeed linearly related to externality, and that externals tended to report more feelings of anger and depression than internals. And in respect of suicide, Williams and Nickels (1969) found externality to be related to suicide proneness. Lambley and Silbowitz (1973), however, thought that the Rotter I - E Control Scale might be unable to reflect the pathological nature of suicide thoughts.

Psychotherapeutically relevant studies (Masters, 1970; Smith, 1970; Gillis and Jessor, 1970) have demonstrated that the creation of a sense of control over one's person and one's environment, should be a strategic part of therapeutic processes. Allied to this is perception of the social atmosphere of the psychiatric ward which was studied by Kish et al. (1971), who found that patients high in internal control, tended to perceive their ward as significantly more supportive, practical, affiliative, involving, clear in its expectations, and as allowing more patient autonomy, than did patients high in

external control.

Lottman and DeWolfe (1972) distinguished between process and reactive schizophrenics, and compared both groups with non-schizophrenics on the locus of control scale. The three groups were matched for age, education, institutionalization, and paranoid symptoms. As predicted, process schizophrenics who had poorer premorbid adjustment were more external in perceived control than the reactive ones ($p<.001$) and non-schizophrenic patients ($p<.01$). For the authors, the results suggest that within schizophrenia locus of control is a function of long-term social learning - an indication that externality may be part of the etiology of some kinds of schizophrenia.

Levenson (1973) studied multi-dimensional locus of control in psychiatric patients. At one-monthly intervals, functional psychotic and neurotic patients were administered three Likert type scales to measure different aspects of locus of control: (a) internality, (b) control by powerful others, and (c) control by chance forces. Initial testing within five days of hospitalization indicated that subjects perceived significantly more control by powerful others and chance forces than did normal samples, and that psychotics scored higher on externality than neurotics. Committed subjects believed that powerful others controlled their lives, and re-admitted subjects had higher perceptions of control by powerful others and chance forces than new subjects. During the first month of hospitalization, subjects gained in their belief in internal control but had no significantly different scores at time of discharge. This last result could reflect either the type of opportunity for personal control conferred on the patients by the hospital (Kish et al. 1971) or the fear of helplessness outside the hospital or both.

Smith et al. (1973) in a study of perceived locus of control and future outlook among psychiatric patients found that

internals tended to report more favourable opinions about their future chances of adjustment after release from hospital. Males reported a significantly more favourable outlook toward adjustment than did females, and first admission subjects were more optimistic in outlook than were subjects with poor admission histories.

Therapeutic direction of patients from a sense of powerlessness to a sense of control over event-outcomes may be facilitated by first establishing what patients regard as the causal loci of their problems. A suggestive attempt in that direction was made by Calhoun et al. (1973) who studied outpatients' perceptions of the causal loci of their psychological problems, and found that problems perceived as caused by internal factors tended to be seen as more severe and as having lasted a longer period of time.

(iv) Locus of Control in Alcohol, Drug and Nicotine Addicts

Quite often, society associates the uses and abuses of addictive substances such as alcohol, drugs and nicotine, with delinquents or delinquency proneness. It is, thus, worth examining such studies as have dealt with interactions between locus of control and addiction to these substances.

Chotlos and Dieter (1959) had pointed out in respect of the etiology of alcoholism that alcohol may become the instrument for modifying unpleasant feeling states. Although Jessor et al. (1968) later found the Rotter (1966) I - E Scale a predictive failure in respect of deviance in drinking behaviour, they did find that drinking can serve, for some people as an adaptive response to frustration. But Goss and Morosko (1970) found, contrary to prediction, that alcoholics scored more significantly in the internal direction than did non-alcoholics. And in a cross-cultural study of the issues involved, Jessor et al. (1970) found that while American youths were more internal in orientation than their Italian counterparts, a stronger linkage was also

found in the Americans between personality attributes reflecting frustration, alienation, and powerlessness on the one hand, and variation in drinking behaviour on the other - a situation that was not acute among the Italians because of gentler methods of socialization into alcohol ingestion. It thus seems clear from Jessor et al. (1970) that cultural differences in the socialization and institutionalization of alcohol use, can determine whether it is perceived as an internal or an external weapon of control.

Because of the tendency of alcoholics to rationalize their powerlessness to control their drinking, Gozali and Sloan (1971) hypothesized that alcoholics would be more internal than non-alcoholics, and found the hypothesis upheld. More or less similar findings were recorded by Distefano et al (1972), and Gross and Nerviano (1972).

Oziel et al (1972) attempted to apply to alcoholics the findings of earlier investigators (Getter, 1962; Gore, 1962; Crowne and Liverant, 1963; Strickland, 1963) that individuals labelled internal on the I - E Scale become resistive, negativistic, and non-conforming when aware of a manipulative attempt to take away their control of their own behaviour. A test of the associated prediction showed that alcoholics were strongly internal ($p < .001$). But evidence from Cone's (1971) study of Social desirability and locus of control in alcoholics showed that internality in alcoholics may be contrived.

A more analytic study of locus of control in alcoholics by Butts and Cholos (1973) took the social class and age of alcoholics into account, and showed that alcoholics were significantly more external than non-alcoholics of comparable ages and socio-economic status ($p < .001$). Further evidence for this appeared in Nowicki and Hopper (1974). However, Costello and Manders (1974) still found the excessively internal scores for drinking groups replicated. Tamerin and Neumann (1974) in a descriptive study of alcoholics, supported Costello and Manders,

but not so Carman (1974), who found no relationships between locus of control, drinking rates and social complications.

Segal (1974) administered the Rotter scale and an alcohol and drug use questionaire to 601 college students aged 16 - 39 years. Subjects were classified as either non-users of drug or alcohol, alcohol-only users, marihuana-only users, or multiple drug users. Results tended to support Butts and Chotlos (1973) and Nowicki and Hopper (1974). An internal orientation was associated with non-users, while an external orientation was associated with different types of drug use progressing from marihuana to multiple drug use.

Available evidence thus far does not seem to decisively settle the contradiction in findings between those who say alcoholics are internal in orientation and those who say alcoholics are external.

Attention is now turned to the relationship of locus of control to drug use in particular. In this respect, MacDonald et al. (1973) administered several socio-personality measures including a locus of control scale to college female drug users. Results indicated greater drug use to be associated with a number of self-assertion factors: high social orientation, lower church attendance, greater likelihood of smoking cigarettes, less conformity to peer pressure, and sexual freedom. Davidson and Parsons (1973) however, found that college student drug users and drug experimenters scored significantly in the external direction on the Rotter I - E scale. Moreover, all subjects, in line with conventional conceptions of the personality dynamics of drug users, ascribed greater externality to drug users. But Berzins and Ross (1973) observed that the behaviour of opiate addicts did not fit the customary view of addicts as powerless groups. The authors did not find this surprising since most drugs provide the user or abuser with the 'power' to induce feelings of control over moment-to-moment impulses,

reactions, anxieties, physical states, and so on. Empirical data supported the hypothesis that each addict group would exceed each non-addict group in internality. And Berzins and Ross suggested that it could be that the more external the subject had been in the past, the more rewarding the increases in "personal control" afforded by drugs.

As against the findings of Berzins and Ross (1973), Obitz et al. (1973) administered the Rotter I - E scale and a measure of perceived locus of control of drug-taking behaviour to male and female 12 to 17 year old drug users, and found that subjects scored as externals on the Rotter scale and as neither internals nor externals on the measure of perceived locus of control of drug-taking behaviour. The factor of age may have influenced this latter finding in spite of the finding by Strassberg and Robinson (1974) that locus of control in drug users is not a function of age of the user. Calicchia (1974) controlled for age, race, sex, etc., and found that his 120 adult male narcotic addicts were more internally oriented than their control counterparts. He found further, that heroine addicts receiving substitute narcotic methadone as part of their rehabilitation treatment, were more significnatly internal than heroin addicts undergoing an abstinence form of treatment. But Calicchia submits that his study still leaves uncertain the validity of the narcotic-induced internality hypothesis.

Meanwhile, Kilman (1974) has reported an after-therapy shift in the control orientation of female narcotic addicts from an internal to an external direction. Additionally, Kilman and Howell (1974) have found a within-group suggestive evidence that internal female narcotic addicts are better therapeutic risks than external ones.

Finally, Smithyman et al. (1974) set out to challenge the notion that internal orientation is indicative of good psychological adjustment, by hypothesizing a more internal

orientation among heroin abusers and multiple drug users than among normals. They did find the hypothesis upheld, though the significance level remained unstated. Moreover, it is not clear how much Smithyman et al. took the possibility of drug-induced internality into account.

Earlier than studies of the association of locus of control with alcohol and drug addiction, were studies of the association of locus of control with nicotine consumption. Although research has not been as vigorous in the latter area as in the former two areas, what evidence there is seems to be in the general direction that there is no relationship between nicotine addiction, and internal locus of control. (Straits and Sechrest, 1963; Lefcourt, 1965; James et al. 1965; Best and Steffy, 1971; Berman 1973).

More therapeutically relevant was the finding by Foss (1973) that internal smokers would be more likely to stop smoking than externally oriented smokers. This is in line with the belief in chance control which is a definition of externality.

Among teenagers, Williams (1973) found that smoking was associated with externality among girls but not among boys, and that the smoking behaviour of mothers and fathers had both independent and cumulative effects on their daughters' smoking but no significant effects on their sons' smoking. The relationship to externality of nicotine addiction, in contrast with the apparent tendency of alcohol and drug addiction to be related to internality, points to the inference that addictive substances have differential effectiveness as instruments of reinforcement control.

SUMMARY

The aim of this section has been to review studies relating the locus of control construct to problems of delinquency and a few related pathologies. In both general and specific terms, there is evidence that, relative to societal norms and values, delinquents are more external in orientation

than non-delinquents. But more important is the fact that, because delinquency is a learned phenomenon, the locus of control concept can be used in treatment programmes to alter control orientations - more so if account is taken of within - groups differences.

In regard to the related pathologies of emotional disturbance and mental retardation, it has been found for instance, that success-failure conceptualizations at an internal, personally and socially acceptable level, can be inculcated in the handicapped.

Other studies relating locus of control to wider areas of psychiatric pathologies have shown that schizophrenics, debilitating anxiety sufferers, depressive, and, tentatively, suicide prone individuals, are more external in orientation than normals. The suggestion from several of these studies is that the creation of a sense of personal control should be a strategic part of therapeutic processes.

Regarding the relationship between locus of control and well known addictive substances, findings are still relatively contradictory, except in the case of nicotine consumers who tend to score in an external direction. More research of an analytical kind is needed to resolve the internality paradox among alcoholics and drug addicts.

SECTION F: Social Class and Ethnic Group differences in Internal-External Locus of control.

A substantial aspect of the issue here as it relates to the socialization of locus of control, has been dealt with in Section D above. But since there is general agreement among sociologists that, although delinquency is not confined to any one socio-economic level, most delinquents tend to come from low socio-economic areas and families, it seems useful to

examine further such other studies as have related socio-economic backgrounds to locus of control. Ethnic group differences need examination here, too, since they are often not far from socio economic issues.

Records of earlier researches are evident in Rotter (1966), Joe (1971) who discerned the point that social class interacts with race so that individuals from the lower classes and minority groups tend to have high expectancies of external control, and Lefcourt (1972) who drew the conclusion that there is little doubt that locus of control is linked to social learning within given groups. The weight of the evidence collected from those three reviews is that the socio-economically disadvantaged are generally more external in orientation than middle class people, and that minority groups - Negroes, American Indians, Spanish Americans, Mexican Americans, etc. - have lower expectancies for success and more limited opportunities, and hence are generally more externally oriented than other Americans.

Jorgensen (1972) conducted a within-minority-group study by retesting the hypothesis of Gurin et al. (1969) about a differentiation by Southern blacks of their control beliefs into two factors: personal control over their own lives, and ideological beliefs about the locus of control in the average person's life. Jorgensen found the distinction replicated in the I - E belief structure of mothers and female high school students but not in that of male students. However, evidence also suggested that, generally, the sense of personal control was determined by social rewards and socially appropriate behaviour, and that high prestige groups had higher senses of personal control because they had greater access to social rewards.

Harris and Phelan (1973) compared 16 to 18 year old blacks in integrated and segregated schools and found that blacks in integrated schools were significantly more external than those in segregated shcools.

Most subsequent researches involving the ethnic group variable have acquired a distinctly cross-cultural flavour. Taylor and Jaggi (1974) studied ethnocentrism and causal attribution in Southern India where they asked Hindu adults to read paragraphs describing socially desirable and undesirable behaviours enacted by in-group (Hindu) and out- group (Muslim) members. Subjects were then asked to attribute the behaviour to internal or external causes. It was found that subjects made internal attributions when in-group members performed socially desirable acts and external attributions for undesirable acts. The converse happened in attributions made when the same acts were performed by Muslims. The authors emphasized the importance of attribution theory principles for studying prejudice and the relationship between attitudes and behaviour.

Mann and Taylor (1974) introduced the social class variable into a similarly structured study of English and French Canadians. Middle class English and French Canadians judged the relative importance of the internal traits of actors in causing them to behave in certain ways. The actors were described as belonging to one or other ethnic group, middle- or lower-class or some combination of the two. As in the Taylor and Jaggi study, subjects judged the behaviours of actors as either socially desirable or socially undesirable. Results showed that subjects tended to make more favourable (internal) attributions to members of their own social and ethnic groups than to members of out-groups, and to attribute causality in ways consistent with stereotypes.

Carment (1974) administered the Rotter I - E scale to Indian and Canadian workers and University students and found that the average overall scores of both groups of Canadian subjects were significantly more external than those of both groups of Indian subjects. But when the two factors of personal control and control ideology were isolated, Canadian students

were more internal on the personal control factor and more external on the control ideology factor than Indian students.

According to Garza and Ames (1974), Mexican Americans scored significantly less externally on the full Rotter scale and on the factors of respect, and luck/fate of that scale than the stereotype of fatalism in Mexican Americans would allow.

Comparisons were internationalized further by McGinnies et al. (1974) who administered the Rotter Scale to over 1500 students in Australia, Japan, New Zealand, Sweden and the U.S. An analysis of scores by sex and country showed (a) a sex main effect ($p<.001$) which demonstrated that females had a higher belief in external control than did males; (b) a country main effect ($p<.001$) in which the highest mean external scores were found among Swedish students, followed by students from Japan, Australia, the U.S. and New Zealand, in that order. Only the Swedes and Japanese differed significantly from each other and from the three other countries. A sex by country interaction was not significant. An eight country comparison by Parsons and Schneider (1974) - the countries being Japan, India, France, Germany, Italy, Canada, the U.S. and Israel - again showed a significant country main effect ($p<.001$). Japanese had significantly higher external scores than those from all the other countries. Indians were significantly more internal than the French, Canadians and Japanese. The sex main effect re-appeared with females again scoring significantly more externally ($p<.001$) than males.

Finally, returning to the multi-racial environment in the U.S., Kinder and Reeder (1975) did a survey of large numbers of blacks, Chicanos and Anglos, and found, in contrast to Gurin et al. (1969) and Jorgensen (1972), that the personal control factor of the Rotter scale failed to demonstrate an adequate degree of consistency for the black sub-sample, but showed satisfactory internal consistency for corresponding sub-samples

of Anglos and Chicanos.

Such studies (cf. Cross and Tracey 1971) as have compared delinquents in terms of ethnic groups have been given attention in Section D above.

SUMMARY

Literature as recorded in earlier reviews by Rotter (1966) Joe (1971) and Lefcourt (1972) regarding the interaction of locus of control with social class and ethnic group, shows that socio-economically disadvantaged people and minority groups tend to score more externally than middle-class and majority group peoples. The evidence that Black Americans are internal with regard to the factor of personal control and less so with regard to control ideology is in dispute. But there is no dispute so far about the finding that blacks in integrated schools are more external than blacks in segregated schools.

More recent researches affecting the ethnic group variable have gone more extensively cross-cultural. Analyses have shown repeated significant "country" and "sex" main effects. In this respect, Indians appeared to have been much more internal and Japanese and Swedes much more external than one would have predicted from stereotypes.

The level of prejudice and stereotyping in a society could, it seems, be effectively monitored with attribution techniques according to researches comparing historically antagonistic groups with one another in India and Canada.

SECTION G: Sex differences in Internal-External Locus of Control

This section of the review is necessary not only because sex differences in locus of control are predicted in this study, but also because reviews of locus of control studies have hardly, if ever, included a subhead for sex differences. In the earliest review of locus of control studies, Rotter (1966)

naturally paid more attention to gross distinctions of people in terms of internality-externality, contenting himself with the conclusion that sex differences did not seem to influence an individual's belief regarding locus of control. In his review, Lefcourt (1966a), too, mentioned sex differences only in as far as this concerned Crandall et al's. (1965) Intellectual Achievement Responsibility (I.A.R.) Scale, in regard to which responsibility attribution was significantly related to most criteria for males, but not for females. On the other hand Joe (1971), in his review, was convinced of two things: (a) that, contrary to Rotter's (1966) conclusion, sex differences appeared to influence an individual's belief regarding locus of control, such differences being likely to be related to cultural roles assigned to each sex, to social class, and to regional effects; and (b) that Crandall et al's (1965) predictions regarding locus of control and achievement-related activities were not consistent for both boys and girls.

Investigations reviewed by Lefcourt (1972) have indicated the following points regarding sex differences:

(a) Achievement as measured by the California Achievement Test, has associations with locus of control for males but not for females;

(b) Intelligence as assessed with the Otis-Lenon Mental Abilities Test has not been significantly related to locus of control for males or for females; and

(c) The relationship of locus of control to parental protectiveness/nurturance appears to be a matter of interaction between the sex of the parent and the sex of the child (cf. Section D above).

In an attempt to put some order into what follows, studies are grouped for review into achievement-related, pathology-related, self-related and miscellaneous units. With regard to achievement-related studies, Sinha (1972) investigated the relation of locus of control to sex and achievement values in

India. The I - E scores of the 55 female and 30 male subjects were classified into factors of personal control, ideological control and system modifiability (the degree to which subjects belief that social events can be changed by individual effort). Results suggested that males were more internally controlled than females on the personal and ideological control dimensions ($p<.05$). Subjects with high levels of achievement value orientation were more internally oriented than those with low nAch, particularly on the system modifiability dimension. Sinha explained the sex differences in terms of the influence of child rearing practices and related sex roles in India. Duke and Nowicki (1974) assessed the relationship between locus of control and achievement in male and female undergraduates using the Adult Nowicki-Strickland Locus of Control Scale, the Rotter I - E Scale and aptitude test performances. High achievement was related to internality on the Nowicki-Strickland scale for males and to externality for females. Cultural role expectancy was again seen as the most plausible explanation of the sex differences.

Deaux and Emswiller (1974) predicted that (a) when a male and a female perform equally well on a male-related task, the male's performance would be strongly attributed to skill, while the female's performance would be strongly attributed to luck, and (b) when a male and a female perform equally well on a female - related task, the female's performance would be more strongly attributed to skill, while the male's performance would be more strongly attributed to luck. An analysis of the attributions showed, as predicted, that performance by a male on a male-related task was attributed to skill, whereas an equivalent performance by a female on the same task was seen to be influenced more by luck. But contrary to prediction, the reverse did not hold true for performance on a female-related task. So, on the whole, males were seen to be more skillful,

and by implication more internal than females even on female-related tasks. What the results seem to indicate is that not only males but also females themselves are brought up to underate female abilities and skills. The authors point out, however, that when objective performance criteria for males and females are presented, no differences in rating are found between the sexes, but when causes are attributed, females seem to lose out, a fact which exposes the subtlety of sex discrimination.

Deaux and Emswiller's investigation was diversified by Feldman-Summers and Kiesler (1974) who conducted two experiments to ascertain causal attributions by males and females, again for identical performances. In both experiments, subjects attributed causality along four dimensions: ability, motivation, task difficulty, and luck. In the first experiment, these attributions were made to people who had been highly successful, moderately successful, or unsuccessful on an academic problem - solving task. In the second experiment, the task involved performance in a career (medical). Results showed that in both experiments, subjects attributed greater motivation to females than to males. Males perceived the female physician as being less able and having an easier task than the male physician. Female subjects perceived the female physician as having a harder task than the male physician. The authors concluded that "the cause of a female's success is not necessarily perceived as luck, nor a male's success necessarily attributed to ability as suggested by the Deaux and Emswiller study. Our experiments which allowed the subjects to make attributions along four dimensions, suggest that there may be a number of attributional patterns for expected and unexpected outcomes. What seems to be the case is that high ability, a stable internal attribution, and to a lesser extent task ease (or environmental favourability) which is stable and external, are used to explain expected success, that is, success by males. Motivation, a variable

internal attribution, and sometimes luck, are used to a greater degree to explain unexpected-female-success." p.854.

In relation to achievement, therefore, it may be said that women may be more external than men because of child-rearing practices devised to serve cultural role expectations which in turn perpetuate biases, found in both sexes, against the skills, abilities, performances and achievements of women.

In relation to pathology-related sex differences it needs to be said that some of the studies have appeared in Section E above. Smith et al. (1973) in a study of perceived locus of control and future outlook among male and female psychiatric patients, found that sex and prior hospitalization were related to future out-look inventory scores but not to the Rotter I - E scale. Males reported a significantly more favourable outlook toward adjustment than did females.

Nowicki and Hopper (1974) found that among male and female alcoholic in- and out-patients, external orientation was related to a greater evidence of psychomotor impairment in females, and to generally lower I.Q. scores for both sexes. It is possible that psychomotor impairment in the female subjects reversed the alcohol induced internality observable in a number of studies in Section E above.

Two other studies dealt with pathologies in male and female children. The effects of sex and race on the attribution by educable mentally retarded children, of responsibility for success and failure, was examined by Panda and Lynch (1974). While all subjects indicated greater externality when failure situations were described, male subjects appeared to be more internally controlled than females. The same degree of difference was not found by Zern et al. (1974) in a study of cognitive style and overt behaviour in emotionally disturbed adolescents, for whom results were found to be almost identical for males and females. It is hard to determine which sex is

better placed in terms of locus of control and the pathologies in general. What may be said is that orientation one way or the other or even neither way, may be a factor of the nature of the pathology affecting the sample under investigation.

In a self-related research report involving sex differences in locus of control Ryckman and Sherman (1973) administered the Rotter I - E scale and the Feelings of Inadequacy Scale to male and female undergraduates, and found no sex differences. But in a study by Ryckman et al. (1973) of locus of control and self-disclosure of public and private information, the picture was slightly different. Although externally oriented males and females were found to disclose less information to their parents and to male and female friends than internals, females tended on the whole to disclose more self-information than males.

Nicholls (1975) studied the effects of task outcome, attainment value and sex in causal attribution in terms of Heider's naive analysis of action, and found that biased use of available information, indicating either defensiveness or self-derogation, varied with attainment value and sex. While boys defensively attributed failure to luck, the ability attributions of girls were self-derogatory. Nicholls observed that the sex differences suggested less confidence on the part of girls. By applying greater effort in the face of failure than in the face of success, boys might succeed and thereby confirm their belief that failure was due to bad luck. But by applying similar effort regardless of success or failure, girls would not allow success to clearly indicate good ability and would thus maintain their self-derogatory ability attributions. The bias of girls was evident for the stable personal dimension of ability (and, therefore, more serious prognostically), while the bias of boys occurred only for the unstable external factor of luck. Nicholl's explanation is generally consistent with that given by Feldman-Summers and Kiesler (1974) above.

The rest of the studies reviewed in connection with sex differences are more miscellaneous. Thus, Ryckman et al. (1972) hypothesized in regard to women's liberation, that internally oriented women would express greater commitment to social action designed to end discrimination against women than would externals. Subjects involved were both male and female. Neither males nor females perceived commitment to women's liberation activities as desirable behaviour. Nevertheless, as Ryckman et al predicted, internal women expressed greater commitment to women's liberation than did external women. Locus of control was unrelated to such commitment for men.

In regard to help-seeking behaviour, Bottinelli and Weizmann (1973) found that females sought more help than males, but whereas internal males imitated the experimenter's behaviour more than external males when the behaviour was instrumental in task performance, findings for females were unclear.

Among black children, Gruen et al. (1974) found a significant sex difference, females being more external than males. Nowicki and Segal (1974) found that expressed internality was associated with high achievement for males and with greater social involvement for females; but perceived paternal internality was found to be associated with female achievement. (cf. Section D above).

Increases in internality as a result of behaviour modification techniques and counselling efforts were observed in males and females by Reimanis (1974), but while increases were long-term in males, initial increases in females dissipated after a six-month period. It would not be surprising if the initial increases in females were due to a brief departure from cultural role expectations and the dissipation due to a reversion to "what is expected." Staats et al. (1974) administered the Rotter I - E scale to a non-college population of males and females in three age groups: 5 to 15, 16 to 25, and 46 to 60 years. Internal locus of control increased with age

at the same time as a trend was observed for males to be more internal than females.

Finally, on the international scene, McGinnies et al. (1974) and Parsons and Schneider (1974) found, as shown in Section F above, strong sex main effects ($p<.001$) in their studies of locus of control among university students in several countries of the world. So, it seems, sex differences in locus of control do exist after all. It would seem obvious too that the universal differential cultural role expectations for males and females have a lot to do with the differences.

SUMMARY

The examination of sex differences as part of the plan of this study and the absence of an organised review of sex differences in locus of control, are the main raison d'etre of this section. The review was organised into units. The unit dealing with achievement-related studies led to the conclusion that women are more external in orientation than men because of child-rearing practices devised to serve cultural role expectations, which in turn perpetuate biases, common to both sexes, against the skills, abilities, performances and achievements of females even in tasks in which both sexes are equally competent.

The unit dealing with pathology-related studies signalled caution in generalizing as to the control orientation of the sexes, since control orientation may be affected by the particular pathology affecting the subject sample. And, the unit dealing with self-related studies indicated, in the main, that if males and females do differ in control orientation the tendency of females toward self-derogation does nothing to help the situation.

The miscellaneous unit dealt with studies involving women's liberation, help-seeking behaviour, black male and female children, parental nurturance/protectiveness, therapeutically induced internality and international studies of locus of control.

While most studies in this unit can be said to indicate a strong tendency for males to be more internal than females, sufficient indications also appeared to lay the locus of differences between the sexes at the door of cultural role expectations.

SECTION H: Internal-External Control Scales in use

Finally, since a locus of control scale is being purpose-developed for the present study, this review would not be complete without a look at the characteristics of existing scales.

Most people working in the field of social learning theory would agree with Rotter et al. (1972) that it is probably in the area of the methodology of personality measurement that social learning theory has made its best known contributions. This part of the review will, however, be limited as much as possible to mention of measures of internal-external locus of control, since, as Rotter et al. (1972) showed, social learning theory has generated other constructs for which separate measures have been devised.

For the sake of clarity the review is being broken into a subsection dealing with adult scales and a second dealing with children's scales.

(i) Adult Scales

Phares (1957), one of Rotter's students, is generally agreed to have been the first to attempt a device for measuring individual differences in locus of control. He developed a Likert-type scale with a total of 26 items, 13 measuring internal attitudes and 13 measuring external attitudes. Phares found in the first crude attempt at measurement, that prediction of behaviour within a task situation was possible. However, when placed in a chance situation externally oriented subjects showed small differences, albeit approaching

significance, from all other subjects - an obvious case of low discriminability at the external end of the scale.

James (1957) revised the Phares scale, still using a Li-kert format but with the additional feature of "filler" items. James found low but significant correlations between the scale and behaviour in a task situation. Externally oriented subjects showed small increments following success, small decrements following failure, generalized little from one task to another, and recovered little following a period of extinction. Moreover, their expectancy went up after success and down after failure.

The James/Phares (1957) scale was the main methodological lead to the Rotter (1966) scale which is the best known, the most used and the most researched of the available locus of control scales. By way of improvements to the James/Phares scale, Rotter (1966) "------ undertook to broaden the test; develop subscales for different areas such as achievement, affection, and general social and political attitudes; and control for social desirability -----" p.9. After refinements, the final version of the scale had 29 items six of which were "filler" items. In line with Liverant's (1958) operational definition of need value which makes some type of choice or ranking technique mandatory and which is central to Rotter's (1954) social learning theory, in line also with psychometric considerations involving response set (Cronbach 1950) and the validity of forced choice personality measures (Gordon 1951), Rotter settled for a forced-choice technique for his scale.

Biserial item correlations are provided for 200 males, 200 females, and a combination of both sexes. The indices which have a range for the combined group of .109 to .480, are described as moderate but consistent. That the scale is for generalized rather than specific expectancies is clear from Rotter's (1966) statement "that the items deal exclusively with the subject's belief about the nature of the world. That is, they are concerned with the subjects' expectations about how reinforcement is controlled. Consequently, the test is

considered to be a measure of generalized expectancy." p.10. This is no doubt appropriate for adult subjects who may be assumed to have acquired patterns or philosophies of life that incorporate several loci of reinforcement control. Internal consistency and test-retest reliability done after two months, range from .65 to .79, and .49 to .83 respectively. Correlations with the Marlow-Crown (1960) Social Desirability Scale, range from -.01 to -.41, several of which were significant for the sample sizes involved.

Rotter (1966) reports validity indices of between .55 and .60 between his scale and the James-Phares Scale. Significant relationships were also reported between the Rotter Scale and a sentence-completion form of it developed by Adams-Webber (1963), and a semi-structured interview form of it developed by Cardi (1962). Fielding and Poppas (1974) have found a low relationship between the Rotter scale and the strong vocational interest blank.

An indication of how widely used the Rotter Scale is may be noticed from reviews by Lefcourt (1966), Joe (1971), Lefcourt (1972), and from bibliographies by Throop and MacDonald (1971), MacDonald and Davis (1974). An independent test of the validity and reliability of the Rotter scale as a personality dimension was undertaken by Hersch and Scheibe (1967) who found that the scale related consistently to measures of maladjustment, notably the Rotter and Rafferty (1950) incomplete sentences blank, with internal scorers being less maladjusted. It related also to a variety of personality scales - the California Personality Inventory (Gough 1964) and the Adjective Check List (Gough and Heilbrun (1965) - with internal scorers describing themselves as more active, striving, achieving, powerful, independent, and effective. Data suggested internal scorers to be a more homogeneous group than external scorers. Thus, Gough and Heilbrun suggested that

there should be a differentiation of the concept of externality. This was the first suggestion that the I - E Scale might not be a unidimensional instrument, contrary to Rotter's (1966) claim that two factor analyses of his scale had indicated that much of the variance was included in a general factor, and that additional factors were not sufficiently reliable to suggest any clear-cut subscales within the test. Several subsequent researches have dealt with this point.

Mirels (1970) set out to specifically explore "the tenability of the assumption that Rotter's I - E scale measured a unidimensional trait-----" p.226. He identified two factors: a belief concerning felt mastery over the course of one's life, and belief concerning the extent to which the individual citizen is deemed capable of exerting an impact on political institutions. He suggested that predictions involving the I - E scale might be refined by separate considerations of the two factors.

Mirels' two factors were put to experimental test by Woodburn and Bekker (1975) who attempted to associate the two factors differentially with criterion variables by using a correlational design and an experimental intervention design. Results from the correlational analysis supported the hypothesis that the I - E scale is not homogeneous, while results relating to the experimental intervention design were equivocal.

Gurin et al. (1969) extracted two factors: a personal control factor, and a control ideology factor. To these, Reid and Ware (1973) added a fatalism factor, a systems control factor, and a self-control factor (Reid and Ware 1974). Collins (1974) found a common theme running through all 46 alternatives of the Rotter scale when each alternative was rated on a Likert-type scale, but a factor analysis of the data revealed four distinguishable subscales. Thus a respondent may score in an external direction because he believes (a) the world is difficult, (b) the world is unjust, (c) the world is governed by luck, and (d) the world is politically

unresponsive. Reid and Ware (1973, 1974) and Carment (1974) made the suggestion that research should concentrate on homogeneous subscales rather than on the I - E scale as a unitary scale, and that the multidimensional nature of the Rotter scale may be the reason behind the low estimate of its validity. The scale has, however, not been made invalid in any of these findings, and, Carment (1974) has observed that there is little agreement as to the exact number and nature of the factorial dimensions extractable from the scale. What the above researches on the Rotter scale have revealed, it seems, is that more interesting and useful results could be obtained if scores from the Rotter scale were analysed and interpreted in terms of the subscales hidden in it. This implies that the generalized nature of the Rotter scale limits its ability to discriminate between individuals. Clinically and educationally, it would sound like a poor diagnostic aid.

In the view of the present author, there is a distinction to be drawn between conceptual unidimensionality and operational unidimensionality. It seems reasonable to infer that conceptually, individuals lie on a continuum from extreme internality to extreme externality. This appears to be Rotter's (1966) assumption as his scale seems to attempt to capture the essence of the world view or philosophy of life implied in this assumption. But individuals do not appear to be so consistent in their applications of their world views. Thus, operationally, an individual may be very internal in one aspect of life and not so internal in another. This is not to deny the existence of a generally stronger tendency toward one or the other dimension. But the existence of value/need hierarchies must be affirmed too. Thus the prominence and relevance of certain aspects of life in the individual's experience, and the relationship of one aspect to another, should be some of the criteria for a scale measuring his locus of

control orientation. One can apply the locus of control construct to as many areas of life and as many aspects of behaviour as need to be understood and explained in causal terms. This may not be psychometrically neat, but it seems to possess the greatest benefits derivable from applications of the locus of control construct.

It is the external dimension of the Rotter scale that appears to be least homogeneous. Thus Hersch and Scheibe's (1967) results seemed to 'suggest a diversity in the psychological meaning of externality.' p.612. And Levenson (1973) added: "It, therefore, appears that there is some validity for separating out dimensions within Rotter's external classification, since externally oriented people may behave quite differently depending on whether they expect to be controlled by chance forces or by powerful others." p. 398.

Adaptations of the Rotter scale deserve mention in this context. Adams-Webber (1969) developed a story completion form of the I - E Scale for the study of perceptions of moral sanctions. Story beginnings portrayed central characters violating conventional moral norms. Story endings were scored on the basis of whether the consequences of the protagonist's action were represented as externally imposed by other persons or forces, or as directly "caused" by his immoral behaviour. Scores on the sentence completion form were compared to scores on the James-Phares scale, and it was found that a tendency to view moral sanctions as directly contingent upon immoral behaviour was significantly related to a general belief in the internal control of reinforcements.

Levenson (1974) revised the Rotter scale in order "to examine the validity of separating Rotters conceptually unidimensional I - E scale into three dimensions (internal, powerful others, and chance) in order to understand more fully the relationship between involvement and expectation for control."

p.378. The total scale has 24 items, eight for each of the three designated dimensions. A Likert six-point format was employed and the items were personalized. Correlations with the Marlowe-Crowne Social Desirability Scale were reported to be very near 0.00. Item-total scale correlations ranged from .38 to .77 internal consistency estimates using the co-efficient alpha were .61 for the internal scale, .77 for the powerful others scale, and .78 for the chance scale. Split-half reliabilities using the Spearman-Brown correction formular were .62, .66 and .64 respectively. Test-retest reliabilities for a one-week period were .64, .74 and .78 respectively. The scales were validated against an involvement checklist. Significant interactions were obtained between the scales and involvement.

A true-false response form of the Rotter scale was used by Jessor et al. (1968) as part of a battery of survey techniques in an intensive study of the differential rates of occurrence of deviant (alcoholic) behaviour. A relevant part of their conclusion follows: "It is clear------- that the notion of EXPECTATION constitutes one of our most powerful concepts for describing persons with respect to deviance proneness.----- What emerged as crucially important were differences in expectation for achieving what was valued. That expectations play a central role in the selective course of human behaviour seems clear from the data." p.418. The scale employed may share some of the credit, one supposes.

Another novel technique for constructing an I - E scale came from Friedman and Monaster (1973) who constructed one based on 25 proverbs classified as either internal or external in content and scored on six-point scales from strong agreement to strong disagreement. A factor analysis of the scale yielded nine factors, five of which correlated significantly with the Rotter scale. Factor loadings for the items ranged from .39 to .81.

Another innovative idea from Good et al. (1973) involved the exploitation of the concepts of alienation and powerlessness developed in connection with social learning by Seeman (1959, 1963). The scale is called 'An Objective Measure of the Motive to Avoid Powerlessness.' The procedure for item construction involved thinking of situations or events about which one might reasonably worry about the possibility of having little or no control over what happens to oneself. Reliability estimate of the 36 - item scale was .86. Point-biserial estimates ranged from .22 to .59. The authors found a high degree of discriminant validity between their scale and the need for social power scale (Good and Good 1972).

For a study of motivation and locus of control in a cross-cultural African context, Munro (1973) devised a scale with many interesting features. It was used as an experimental device rather than as a normative scale. Sixteen situations were chosen because of their apparent relevance for both African and European-African students in educational institutions. The sixteen situations in effect constituted sixteen item categories. The item categories had three allotments of questions: (a) four questions on each of four situations (Academic, Social, Political, and General) relevant to student life; (b) eight questions referring to positive outcomes and eight to negative outcomes; and (c) eight questions posed with reference to the individual and eight posed with reference to students. The sixteen item scale has six alternative causal explanations of the event stated in each item. Each of the six explanations is then rated on a four-point scale from "no importance to great importance."

The scale was administered to over 500 African and European-African students. As the author concluded: "The results indicate acceptable levels of reliability and independence for the A - C scales and revealed cross-cultural

variation in the meaning of external control." p.2. This indicates once again the differences between individuals in the perception of external control as was pointed out by Hersch and Scheibe (1967) and Levenson (1973). The effectiveness of the Munro scale in a cross-cultural context also implicitly proves the point made earlier that the more relevant the contents of the locus of control scale to the life experiences of the intended population, the more effective the scale and the more meaningful the dimensional scores.

A notable feature of the Munro scale is a widening of the choices of causal explanations available to the subject, and also the rating of all the six alternatives. This may make life easier for subjects who find a two-alternative forced-choice format unsatisfactory. Nevertheless, only further research can show the differential effectiveness of the various formats used in locus of control scales.

In pursuance of their determination to develop comparable locus of control scales across age in order to make longitudinal and latitudinal studies of locus of control easier, Nowicki and Duke (1974) developed a new adult locus of control scale suitable for use on subjects with as little as fifth grade reading ability. The scale has two forms, form C for college adults and form NC for non-college and geriatric adults. (the authors seem to prefer to call it the Nowicki-Strickland Adult Locus of Control Scale, rather than Nowicki-Duke, etc.). Psychometric characteristics were assessed in twelve studies involving 766 subjects. Split-half reliability ranged from .74 to .86, and test-retest reliability after six weeks was .83.

(ii) Children's Scales.

Although Rotter (1954, 1966) took the question of developmental stages rather lightly in his theoretical exposition, it was observed (cf. Section A of the review) that his locus of

control construct has, nontheless, generated a lot of empirical studies with people of various age groups. Thus, quite early in the days of locus of control scale construction, Bialer (1961) constructed a scale which he successfully employed in a study of mentally retarded and normal children. Bialer's stated aim was to study the developmental trend in the conceptualization of the relationship between own performance/ability and success and failure. "With the shift in the conceptualization of locus of control from external to internal, there evolves the ability to categorize events in terms of success and failure." p.304. Bialer believed that this shift was contingent upon (a) socio-intellectual maturation defined in terms of mental age, and physical maturation defined in terms of chronological age. He found his Children's Locus of Control scale to correlate significantly with mental and chronological ages, and with two behavioural measures termed repetition choice, and immediate/delayed gratification pattern. Procedurally, the scale needs to be administered individually and orally, though this doesn't seem to minimize the problem of ascertaining the meanings of children's yes/no responses for which the scale is structured. Indeed, as Gorsuch et al. (1972) found when they used the original revised versions of the Bialer scale, estimates of reliability were generally non-existent for low-verbal-ability children, while estimates of the reliability for high-verbal-ability fourth and fifth graders were as high as .6. Gorsuch et al. stated in conclusion that scales whose reliability changes across subgroups, will produce misleading results Whenever (a) the mean of the children who respond reliably is different from the mean resulting from random responding,

or (b) the variable identifying the subgroups interacts with the construct being measured by the scale. And, since the mean of the locus of control for high-verbal-ability subjects differed from the mean for random responding, the correlation observed between locus of control and correlates of ability, will probably be spurious.

A second locus of control scale for children emerged in a semi-projective form devised by Battle and Rotter (1963). It was an answer to the persistent problem of finding a simple but effective instrument for studying locus of control in children. The test consists of six picture cartoons involving circumstances in which two males, two females, or a male and a female confront each other and one of them asks a question that is expected to provoke an internal or an external response. It was administered to 80 Negro and white school children half of whom also took the Bialer (1961) scale. Test scores were related to sex, age, social class, ethnic group, and behaviour on a line matching task. The Bialer scale correlated significantly with the Battle-Rotter test. An internal consistency index of .93 ($p<.001$) was recorded. For the 40 subjects who had taken the Bialer scale, a significant predicted relationship was found between test scores and number of unusual shifts on the line-matching task; but not with mean expectancy or trials to extinction. Overall findings gave the authors confidence regarding the construct validity of the internal-external control variable as a personality dimension, as well as suggesting some of the developmental conditions involved in the acquisition of generalized expectancies.

It will be noticed that both Bialer (1961) and Battle and Rotter (1963) presumed without question, the existence in children of generalized expectancies of reinforcement in the same manner as James and Phares (1957) and Rotter (1966) did with regard to adults. The present author, as may have been apparent by now, has grave doubts about such presumptions and

prefers children's locus of control scales to be more specific to the familiar limited experiences and life spaces of the target population.

Crandall et al. (1965) made an important advance in this direction by showing that expectancy of reinforcement can be studied in one familiar area of children's experiences - namely, academic/intellectual achievement situations. The relevant locus of control scale was thus called the Intellectual Achievement Responsibility (I.A.R.) Questionaire. In the words of Crandall et al., "While previous scales include a variety of sources and agents such as luck, fate, impersonal social forces, more personal 'significant others', etc., the I.A.R. limits the sources of external control to those persons who most often come in face-to-face contact with a child, his parents, teachers, and peers." p.93. In common with Rotter (1966), however, Crandall et al. used the forced-choice format.

The I.A.R. has other important features as Crandall et al. make clear: "Unlike other I - E scales the scale used in this research was constructed to sample an equal number of positive and negative events. It was felt that the dynamics operative in assuming credit for causing good things to happen might be very different from those operative in accepting blame for unpleasant consequences. It is possible that belief in personal responsibility for the two kinds of events may develop at different rates, or that this may be so for some children but not for others. Thus, the I.A.R. was so constructed that, in addition to a total I (internal or self-)responsibility score, separate scores could be obtained for beliefs in internal responsibility for successes (I+ score) and for failure (I- score)." p.94.

Standardized on a sample of 923 elementary and high school students, the I.A.R. had internal consistency indices ranging from .54 to .60 and test-retest reliability indices ranging

from .69 to .74 ($p<.001$) for younger children, and .65 to .69 ($p<.001$) for older children. The correlation between 1+ and 1- ranged from 0.11 to 0.43, an indication, according to the authors, that one cannot assume the two subscales to be measuring the same orientations. For measuring locus of control of academic achievement, the I.A.R. has no competing scale yet. (Rhiengelheim et al. 1969, shortened the I.A.R. and simplified its language for mentally retarded children - cf. Throop and MacDonald 1971).

As will be seen later, three features of the I.A.R. were adopted in the construction of the scale (C.A.S.C.) for this study, namely, the channelling of control into specific areas of social interaction, the provision of positive and negative items in each of the specific areas, and the use of a forced-choice format.

Nowicki and Strickland (1973) have followed the tradition of Bialer (1961) and Battle and Rotter (1963) in constructing a scale of generalized expectancy of reinforcement for children. Since no investigation has been done into the existence and age of incidence of a generalized belief in locus of control among children, it has, for the meantime, to be taken for granted, with support from usage (Nowicki and Walker 1973; Nowicki and Segal 1974; Nowicki and Duke 1974; etc.) that children can generalize their beliefs. While this is so, the Nowicki-Strickland scale must be regarded as a valuable addition to available scales. What there seems to be no doubt about is children's conceptualization of expectancy in terms of specific aspects of behaviour, for example, in terms of academic achievement, as confirmed by Nowicki and Walker (1974).

The 40 item Nowicki-Strickland Locus of Control Scale for Children was standardized on 1,017 third to twelfth grade children. Estimates of internal consistency are .63 for 3rd, 4th and 5th grades, .68 for 6th, 7th and 8th grades, .74 for

9th, 10th, and 11th grades, and .81 for 12th graders. Test-retest reliability after 6 weeks ranged from .63 for 3rd graders to .71 for 10th graders. For construct validity indices, the Nowicki-Strickland scale was correlated with aspects of the Crandall et al. (1965) scale and with the Bialer (1961) scale. Significant indices obtained were .31 to .51, and .41 respectively. The authors observed that research findings broadly suggested that, particularly for males, an internal score on the scale is significantly related to academic competence and social maturity, and appears to be a correlate of independent, striving, self-motivated behaviour. They concluded that the locus of control variable appears to be a variable of significant impact in relation to children's behaviours, and that the scale appears to be an appropriate instrument for assessing that behaviour.

The Nowicki-Stickland (1973) Locus of Control scale for Children was meant to cater for children of 9 years of age and upwards. So Nowicki and Duke (1974) sought to develop a comparable scale for children of 4 to 8 years of age, because "comparable instruments allow for replication of children's findings in adults and vice versa, without the added confound of unknown relations between non-comparable locus of control instruments." p.875.

The final Nowicki and Duke preschool and primary I - E Control Scale (PPNS-I-E), as it was called, had 34 items which were administered to 240 male and female children. A distinguishing feature of the new scale was the use of boy-boy, girl-girl, and girl-boy cartoon pictures alongside verbal items. "The cartoon drawings selected had one child presenting the item in a cartoon bubble above its head while the other child had above his or her head a bubble with the word yes and no in it. The child was instructed to draw a line through or circle around yes or no in answer to the question." p.876. After

practice trials, the appropriate statement was then read out to the child by the examiner. This method is a definite improvement on that of asking children of very tender age to say yes or no to a statement.

Measures with which the P.P.N.S - I-E was correlated for construct validity purposes were the Comfortable Interpersonal Distance Scale (Duke and Nowicki 1972), an achievement test, and socio-economic data obtained from school records, and satisfactorily significant indices were found. Item-total correlations were reported as being in the moderate range and test-retest reliability after six weeks was reported at .79 ($p<.001$) for seven year olds. P.P.N.S - I.E - Social desirability correlations ranged from - .08 to .11.

There are undoubted advantages for developing I - E scales that possess the same pattern of psychometric properties applicable to a continuum of ages 4 through old age. The move facilitates research in areas such as parent-child and sibling locus of control relationships, as well as cross-sectional and longitudinal designs.

With ages 4 to old age catered for by Nowicki and Duke (1974), Nowicki and Strickland (1973), and Nowicki and Duke (1974), Mischel et al. (1974) turned attention to pre-school children by developing the Stamford Preschool Internal-External Scale (S.P.I.E.S.) for studying individual differences in locus of control and persistence in young children. According to the authors, "The strategy for developing and validating the S.P.I.E.S. was based in part on the theoretical view that social behaviour, rather than being determined by global, broadly generalized personality traits, depends on the person's specific response capabilities and his expectations concerning the consequences of alternative courses of action in the situation." p.266. The note of specificity sounded here, accords with those of Crandall et al. (1965) and with the present author's

views on the matter, although in other places, Mischel et al. seem only half convinced. Nevertheless, in the construction of the S.P.I.E.S., they made an effort "to construct the scale from diverse but specific situations appropriate to the age of these subjects (eg. parent-child interactions, peer interactions, and control over objects)." p.266.

Like Crandall et al. (1965) Mischel et al. chose the forced-choice format rather than a yes-no one preferred by Bialer (1961) and Nowicki and Strickland (1973). They also gave adequate weight to positive and negative items. After a pretest on 15 subjects, normative data were collected from 211 boys and girls. Split-half reliability was low but significant for both the positive subscale (.14, $p<.05$), and for the negative subscale (.20, $p<..01$). Test-retest reliability was, however, higher (.42, $p<.001$) for the positive subscale, and (.52, $p<.001$) for the negative subscale. By way of validating the S.P.I.E.S., Mischel et al. studied specific laboratory situations involving delay of gratification. Enough information was obtained from separate experiments to indicate the validity of the scale. More specifically, the positive subscale rather than the negative one was found to be significantly related to persistence in situations in which instrumental activity resulted in a positive outcome; and the negative subscale rather than the positive one was related to persistence when instrumental activity could prevent the occurrence of a noxious outcome.

Stephens and Delys (1973) raised valid objections to the forced-choice format especially when this is applied to pre-school children. They contended that when such forced-choice scales are administered orally to young children, the children tend to show a significant tendency to repeat the last read response alternative (presumably because of difficulty in remembering the first read alternative). This tendency was

confirmed by Stephens and Delys when pilot-testing their scale - the Reinforcement Contingency Interview. They also found, as suspected, a strong yes-no response set among second graders in the use of the Nowicki-Strickland (1973) scale. So they opted for allowing the pre-schooler the use of his own language system, asking for clarification where necessary, except for the very simplest questions. "The general model, then, called for a way of determining, by a free-response method employing maximally simple questions, the degree of association between reinforcements and behaviours." p.57. The class of objects or primary reinforcers chosen were mostly those of importance in school and in socialization - parents, teachers, peers and self. Thus, cues of approval and attention were paramount.

A set of 40 questions was generated, half of which concerned positive reinforcements and half negative reinforcements. Rater reliability was .98. The correlation between parallel forms administered two weeks apart, was .69, and interviewer effects were negligible. Construct validity as manifested in behavioural correlates received strong support as did age and socio-economic differences.

There can be no doubt that Stephens and Delys have made laudable efforts at overcoming the numerous difficulties that beset the construction of scales for children of this age group. What may turn out to be a weakness lies in the testing procedure which allows for occasional rewording of questions, and what's more, supplementation with facial expressions and inflections. There is obvious room for response bias which could arise from the child's expectation of, dependence on, and interpretation of the expressions of the test administrator. For children of this age group, there is something to be said for the elicitation of locus of control responses through a combination of pictorial and written items used with some success by Nowicki and Duke (1974), though, even such a strategy cannot be

fool-proof.

The combined pictorial and verbal approach was adopted by Gruen, Korte and Stephens (1974) for children of differing socio-economic and ethnic status. In a methodological and substantive study, the scale was administered to a total of 1,100 black, white, and Spanish moderately disadvantaged children from grades 2, 4 and 6. The white children were compared to a sample of 155 affluent white children. As predicted, older children made more internal responses than younger children. The affluent children made more internal responses than the disadvantaged. White children made more internal responses than either black or Spanish children. Among black subjects, there was a significant sex difference, females being more internal than males, unlike the situation in findings by, for example, Sinha (1972), Duke and Nowicki (1974), McGinnies et al. (1974), Parsons and Schneider (1974), Reimanis (1974).

In terms of external validity, the locus of control scores of another sample of 50 white second graders were found to correlate significantly with grade point averages, but not significantly with scores on the Otis-Lennon Mental Ability Test. In terms of Social desirability the scale related non-significantly with the Crandall Social Desirability Scale. Locus of control scores were found to be generally skewed toward the internal end of the scale (a phenomenon also reported by Nowicki and Strickland (1973) in regard to their scale). It was most discriminative at the second grade level - the age factor obviously making itself felt.

Essentially, the Gruen-Korte-Stephens Internal-External Scale is a 38 page booklet with one item on each page. The pictures are drawn as stick figures so that they cannot have the features of any particular racial or ethnic group. The statements that correspond to the pictures describe the goings on in the picture to the child and then put forward internal-

external response alternatives to the child. The internal alternative appears an equal number of times in the left and right positions, and there is an equal number of items in which the 'hero' is female as those in which the 'hero' is male. Moreover, each item that is positively toned, is balanced by an item that is negatively toned. The response method for second graders is simply to draw an X through the chosen alternative. For fourth and sixth graders, the response is made by blackening a line on an I.B.M. answer card, etc. All in all, it appears that the Gruen-Korte-Stephens Internal-External Scale contains the greatest number of conditions designed to overcome the difficulties of catering for young children in the field of locus of control measurement. It is thus highly commendable. The steps in its construction should be adopted for pre-school scales. The problem of skewness of scores toward one or the other dimension is associated with the problem of establishing a mean difficulty level for anything beyond a fixed age group of growing people. It is highly intractable.

SUMMARY

Since the publication of Rotter's (1954) social learning theory which incorporated the locus of control construct, several scales have been developed to measure the two control dimensions (internal and external) in various groups of individuals. In this last section of the review, an attempt has been made to examine these scales in terms of their psychometric characteristics and the effectiveness of their scoring formats. To achieve this with order and clarity, the scales have been grouped into adult and children's scales and examined accordingly.

Among adult scales, the Rotter (1966) scale, the result of a refinement of the James-Phares (1957) scale, is judged to be the best known, most used, and most researched. Part of the result of that research has been the discovery that, contrary to

Rotter's (1966) assumption, only the internal dimension of the scale appears homogeneous, the external dimension being actually multi-factorial. The total scale itself possesses several factors, the exact number of which is a subject of uncertainty. This has given rise to a number of adaptations (of the Rotter scale) and innovative approaches to adult locus of control scale construction; these attempts seem to be pointing in the direction of narrowing down the generalized nature of the Rotter scale. Whatever its faults, the Rotter scale seems to possess the most discriminative power of all available adult scales.

Although a number of constructors of children's scales still incline towards generalization of expectancies of reinforcement, Crandall et al's (1965) lead in constructing a specific scale for intellectual - academic achievement responsibility attributions, has largely caught on, and many highly useful scales have emerged to cover kindergarten age groups and upwards. The present author shares the view of Crandall et al. that, in constructing children's scales, item contents should be specific and relevant to the familiar and limited life spaces of the target population. Carment (1974), and Reid and Ware (1974) have, for instance, suggested that better research might result from this approach. There remains, however, the persistent difficulty among several, of establishing a satisfactory difficulty level for more than a very limited age range.

SECTION I: Aims and Hypotheses of the Study

The aims of this study are both substantive and methodological. With regard to the substantive aspect, the research is directed towards finding out the extent to which young people conventionally described, adjudicated and institutionalized as delinquents as against groups of non-delinquents of equivalent age range, regard event outcomes in their life spaces as attributable to themselves and to other relevant people, things and situations, as social causes or "origins" of such outcomes. It is also intended to study the relationship between the orientations (internal or external) of such attributions and the level of self-esteem of both groups of subjects. The latter aim arises from the assumption that high self-esteem enhances realistic attributions, and that similarities exist between the developmental or socialization antecedents of realistic or internal attributions and high self-esteem. The basis for this assumption may be found in relevant sections of the review of literature, notably Chapter II, Section B. Linked to the socialization antecedents of any concept or construct, is the variable of social class. It is assumed then that the variable of social class interacts with both self-esteem and locus of control orientation. So, the third aim is to examine differences in self-esteem and attribution between subjects of different social class structures. Sex differences will also be explored.

The fourth aim of the study is one that cannot be fulfilled in the context of this study because access to case records was not allowed, but which is stated here because of its potential importance as a variable. It is the relation of locus of control to type of offence. It is an aim that this researcher hopes to pursue (and it is hoped others will pursue) in a different context. To make up somewhat for non-pursuance

of that aim here, an analysis of responses to each item of the purpose-built scale for this study will be done. The rationale for the scale (the C.A.S.C.) can be seen in the next Chapter (Chapter III). That analysis will show in which areas of the life spaces of young people delinquents, as opposed to non-delinquents, tend to perceive eventoutcomes in an external direction.

The methodogical aim serves the substantive ones. It is to construct a locus of control scale termed the "Causal Attribution Scale for Children," to validate it relatively well for experimental rather than clinical purposes, and to use it as the major instrument in the substantive aspect of the study. The specific features of the scale are given in Chapter three, but in general terms, the intention is to find out the effectiveness of a locus of control scale built around familiar, relevant and non-abstract sources of reinforcement control for young people.

Main Hypotheses

Hypotheses arising from the above aims and assumptions are put into two main groups: Those concerning differences between groups of young people, and those concerning relationships between the major constructs of locus of control and self-esteem.

Hypotheses concerning differences

1. It it hypothesized that delinquents will be significantly less internal (more external) in control orientation than control subjects.
2. In correspondence with the above, it is further hypothesized that delinquents will be significantly lower in self-esteem than controls.
3. Social class differences are also hypothesized, with middle-class controls being both significantly more internal in control

orientation and significantly higher in self-esteem than lower-class and delinquent subjects, but with slightly less significant differences in both constructs between lower-class controls and delinquents.

4. As will be seen in Chapter III, 15 sources of reinforcement control have been chosen as familiar, relevant and concrete enough for young people, and resulting reinforcements have been considered in their positive and negative qualities. It is therefore, hypothesized that, in respect of the 15 sources of reinforcement control, delinquents will have significantly higher preferences for positive reinforcements than for negative ones, while the preferences of controls will be weighted on the side of choosing more internal negative reinforcements reflecting the fact that they are more able to face unpalatable event outcomes.

Hypothesis concerning relationships

5. Finally, it is hypothesized that self-esteem will correlate with locus of control the higher internality scores, reflecting similarities in the developmental antecedents of the two constructs (cf. Chapter II, Section B).

CHAPTER III Methodology

SECTION A: Development of the Causal Attribution Scale for Children

For the present study, there are theoretical and pragmatic reasons for developing a separate locus of control scale. Theoretically, the author, as already indicated, shares with Crandall et al (1965) the doubt about the ability of children to generalize their beliefs regarding reinforcement expectancies to the extent assumed for adults by Rotter. (1966). Although this argument may not hold for the upper age limit for which this scale - the Causal Attribution Scale for Children (C.A.S.C.) - is being developed, it may well hold for the lower age limit as long as no systematic research has as yet been done to determine the average age at which children start extending their perceptions of event outcomes beyond the confines of the familiar and the situationally relevant. What there is no doubt about is the fact that children conceptualize expectancies in terms of specific situations (Crandall et al. 1965; Nowicki and Walker 1974). The younger the children the stronger the certainty (Mischel et al. 1974). It follows that young people's attributions of causality can be assumed to be more significantly predicated on familiar factors than on unfamiliar ones.

For pragmatic reasons the C.A.S.C. is meant for a study of differences in locus of control between young people (delinquents) whose social perceptions are either intrinsically limited or truncated by the circumstances of the social pathology to which they are subject, and their more fortunate counterparts. It is with this in mind that the following specific sources of reinforcement expectancies are chosen: (1) father, (2) mother, (3) siblings, (4) self, (5) peers, (6) sex partners, (7) teachers, (8) family doctor, (9) pop or T.V. star, (10) police (11) institutions like schools and prisons, (12) domestic animals, (13) the physical environment like playgrounds or other

open spaces, (14) inanimate objects like personal or public property, and (15) luck as in gambling. This is an important feature of the C.A.S.C. which will not, however, necessarily make it better than other locus of control scales. It is no more than a tentative research scale directed at hypothesis testing.

Another feature of the C.A.S.C. concerns the quality of reinforcements from the fifteen loci of control above. It is constructed to provide positive and negative reinforcements from each of the loci. In this the C.A.S.C. follows precedence set by Crandall et al. (1965), Gruen et al (1974), and Mischel et al. (1974) in providing equal numbers of positive and negative items.

Further pragmatic reasons for a scale of the C.A.S.C. type are mainly clinical. There is no doubt that among the practical implications of the locus of control construct, clinical ones have high priority (Rotter 1954, 1966, Rotter et al. 1962; Lefcourt 1966; Hersch and Scheibe 1967; Joe 1971; Tyre 1972). The present study uses institutionalized delinquents as experimental subjects. Although the C.A.S.C. is not constructed for exclusive use with institutionalized delinquents, but rather for use with all children whose ages are within the range legally defined as institutionalizable if in conflict with British law, its format is regarded as useful for clinical studies of attribution by this age range. While delinquents, for instance, could attribute event outcomes in their lives to a variety of sources or causes, it is also probable that attributions to sources of reinforcement which have featured prominently in their socialization experiences, will come to the fore more often than other sources. If a locus of control scale can isolate those sources, especially where such sources of reinforcement are also sources of conflict or potential conflict, then such a scale has some diagnostic value and can also be a help in the therapeutic process. From this point of view, it is emphasized, the C.A.S.C. is no more than an exploratory scale. It is the

rationale behind its format that matters more at this stage. Since empirical work has shown that locus of control changes not only with age (Crandall et al. 1965; Lifshitz 1973; Pawlicki 1974), but also with training and counselling (Reimanis 1974), a reinforcement source that arouses undesirable negative attributions in a young person, can be the starting point for work towards clinical change.

The number of items in the C.A.S.C. was determined by the decision to use 15 sources of reinforcement control. Since two response alternatives, one positive and one negative, were given for each of the 15 loci of control, the number of items in the whole scale was fixed at 30. Information from item statistics (which follow shortly) helped in the modification rather than the elimination of items. A forced-choice format was adopted in preference to a yes - no format which can leave one in doubt as to whether a yes from a child actually stands for a yes rather than a no, depending on how he is used to having questions put to him by his parents, etc.

Regarding administration, the C.A.S.C., a pencil-and-paper test, can be administered to groups or to individuals. It yields the following separate measures: internal positive; internal negative; external positive; external negative; internal positive and negative for each or a combination of sources of control from the 15 loci; the same is applicable in respect of external positive and negative.

Data regarding validity and reliability and social desirability follow.

(i) First Validation Attempt

In the first attempt, the C.A.S.C. was given two forms, FORM B for boys and FORM G for girls. This depended entirely on whether the central actor was male or female, otherwise every other feature was the same. The criterion scale against which the C.A.S.C. was validated was the Rotter Scale, preferred because it is the most researched. It is also the most discriminating. But only ten items were selected on a combination

of the following bases:

(a) sizes of biserial correlations - items with the highest biserials (0.2 and over) were chosen for the three groupings of males, females, and males and females together.

(b) level of ease and directness of Rotter items for the type of subjects (adolescents and teenagers) envisaged. By coincidence, those items with the highest biserials happened also to be the ones considered to have the necessary level of ease and directness. Statistically this may not be surprising.

The C.A.S.C., the Rotter I - E Scale and the Crandall (1965) Children's Social Desirability Scale were administered successively to 99 subjects constituted as follows:

(a) 60 boys aged 11 to 14 from a lower - to lower-middle-class secondary school;

(b) 25 girls aged 11 to 12½ from a lower - to lower-middle-class secondary school;

(c) 7 male subjects aged 13 to 16½ from a Community Home (mostly delinquents);

(d) 7 female subjects aged 15 to 18 from a Community Home (mostly delinquents).

However only 58 subjects, all boys, took the social desirability scale, because at the time of testing the girls, details of the social desirability scale had not arrived from the author (Crandall). Average testing time was under one hour for all the three tests taken successively.

A correlation of 0.24 ($p<.025$ two-tailed) was obtained between the C.A.S.C. and the abbreviated Rotter Scale. (For items drawn from the Rotter Scale, cf. Appendix B). This validity index was considered useful in view of Garret's (1960) statement that, as a general rule, items with validity indices of .20 or more are regarded as satisfactory. Table III.1 below gives a detailed breakdown of validity indicies for component groups of the 99 subjects. Internality instead of the usual externality

scores were used in computations.

TABLE III.1: Validity Co-efficients in First Validation Attempt.

Groups and their Sizes	C.A.S.C./Rotter Relations	
All Subjects (M + F) (N = 99)	.24	($p<.025$)
All Males (N = 67)	.25	($p<.05$)
All Females (N = 32)	.18	(ns)
Male 11/12 year olds (N = 20)	.63	($p<.01$)
Male 13 year olds (N = 20)	.05	(ns)
Male 14 year olds (N = 20)	.10	(ns)
Male and Female Delinquents (N = 14)	.48	($p<.10$)
Male Delinquents (N = 7)	.68	($p<.10$)
Female Delinquents (N = 7)	.13	(ns)
Male and Female Normals (N = 85)	.20	($p<.10$)

(All significance levels are two-tailed).

From Table III.1 it is clear that while the validity index for all 99 subjects is significant, the highest level of significance is recorded for the youngest group of subjects (11/12 year old males). However, as the breakdown progresses, age appears to have a lowering effect on the correlations. It is remarkable that it is for delinquent male subjects that the highest correlation is recorded, a correlation size in the same range as that for 11/12 year old normal subjects. A break down of the non-significant all female validity index appears also to show the effect of age, with the younger (12 year old normal) girls having a slightly higher index than the older delinquent girls. It seems that the factor of sex is operating alongside that of age.

It does not seem to be a question of just being older than, but probably also of being at the 13th to 14th etc. years of development. For a more defiantly external trend in reaction is evident in the mean internal-external scores of the subgroups, where, both in the C.A.S.C. and in the Rotter Scale, the younger groups of both males and females score more internally than older males and females - cf. Table III.2.

Table III.2 also shows that the scores of the C.A.S.C. are heavily biased in the internal direction. This is evident among all subgroups and ages in the total sample except perhaps in the case of the 7 delinquent females. This indicates that the C.A.S.C. is

TABLE III.2: Mean Internal-External Scores for The C.A.S.C. and the Rotter in the First Validation Attempt.

	C.A.S.C.		Rotter	
Subgroups of Subjects	I	E	I	E
11/12 year old males (N = 20)	23.9	6.1	5.10	4.90
13 year old males (N = 20)	22.6	7.4	4.40	5.60
14 year old males (N = 20)	20.95	9.05	4.70	5.30
11/12 year old females (N = 25)	22.44	7.56	5.20	4.80
Delinquent Males (N = 7)	22.71	7.29	5.43	4.57
Delinquent Females (N = 7)	17.43	12.57	4.14	5.86

defective in being both too simple and insufficiently discriminative of internals and externals. In contrast, scores on the Rotter Scale look more discriminant.

Because of the device of providing positive and negative items in equal numbers, two ways of splitting halves for the reliability of the C.A.S.C. became appropriate: (a) splitting positive and negative halves, and (b) splitting odd and even halves. The positive-negative reliability co-efficients are presented in Table III.3 for the whole sample and subgroups of it. The Spearman-Brown correction was applied to the reliability co-efficients reported here.

TABLE III.3: Positive-Negative Reliability Indices in the First Validation Attempt

Subgroups	Co-efficients
All Subjects (N = 99)	.53 ($p<.001$)
All males (N = 67)	.46 ($p<.001$)
All Females (N = 32)	.62 ($p<.001$)
11/12 year old males (N = 20)	.57 ($p<.01$)
13 year old males (N = 20)	.20 (ns)
14 year old males (N = 20)	.68 ($p<.001$)
11/12 year old females (N = 25)	.41 ($p<.05$)

TABLE III.3: Continued

Subgroups	Co-efficients.
Delinquent males and Females (N = 14)	.64 ($p<.02$)
Delinquent males (N = 7)	.02 (NS)
Delinquent Females (N = 7)	.73 ($p<.10$)

The odd-even reliability co-efficients are presented in Table III.4 for the whole sample and subgroups of it. But for the low

TABLE III.4: Odd-Even Reliability Indices in the First Validation Attempt.

Subgroups	Co-efficients
All Subjects (N = 99)	.64 ($p<.001$)
All Males (N = 67)	.61 ($p<.001$)
All Females (N = 32)	.65 ($p<.001$)
11/12 year old Males (N = 20)	.77 ($p<.001$)
13 year old males (N = 20)	.43 ($p<.10$)
14 year old males (N = 20)	.49 ($p<.05$)
11/12 year old females (N = 25)	.34 (ns)
Delinquent males and females (N = 14)	.79 ($p<.001$)
Delinquent males (N = 7)	.73 ($p<.10$)
Delinquent females (N = 7)	.80 ($p<.05$)

difficulty level and the consequent poor discriminant power of the C.A.S.C., the reliability co-efficients obtained at this stage compare favourably with co-efficients reported for their scales by Crandall et al. (1965), Rotter (1966) and Nowicki and Strickland (1973).

Biserial item-total correlations with that item excluded, were computed for the 30 items of the C.A.S.C. Since, according to Guildford and Fruchter (1973, p.297) the biserial r computed with the standard biserial formula is less reliable than the pearson r, the latter was preferred in this instance. The data are presented in Table III.5 for all males, all females, and males and females together.

TABLE III.5: Biserial Correlations of the C.A.S.C. in the First Validation Attempt

Items	Males (N = 67)	Females (N = 32)	M + F (N = 99)
1	.10	.29 ($p<.10$)	.18 ($p<.10$)
2	.23 ($p<.10$)	.48 ($p<.01$)	.27 ($p<.01$)
3	.33 ($p<.01$)	.63 ($p<.001$)	.45 ($p<.001$)
4	.51 ($p<.001$)	.47 ($p<.01$)	.43 ($p<.001$)
5	.34 ($p<.01$)	.00	.22 ($p<.05$)
6	.02	.26	.12
7	.08	.01	.10
8	-.09	-.21	-.11
9	.26 ($p<.05$)	-.16	.09
10	.09	.11	.05
11	.06	.22	.07
12	.29 ($p<.05$)	.42 ($p<.05$)	.35 ($p<.001$)
13	.41 ($p<.001$)	.37 ($p<.05$)	.36 ($p<.001$)
14	.10	.34 ($p<.05$)	.20($p<.05$)
15	.08	-.04	.07
16	.19	.11	.16
17	.13	.49 ($p<.01$)	.25 ($p<.05$)
18.	.31 ($p<.05$)	.06	.23 ($p<.05$)
19	-.09	.23	.08
20	.16	.11	.15
21	.35 ($p<.01$)	.39 ($p<.05$)	.39 ($p<.001$)
22	-.04	.47 ($p<.01$)	.18 ($p<.10$)
23	.37 ($p<.01$)	.37 ($p<.05$)	.38 ($p<.001$)
24	.28 ($p<.05$)	.01	.19 ($p<.10$)
25	.31 ($p<.05$)	.19	.26 ($p<.01$)
26	-.11	.10	-.01
27	.13	.27	.22 ($p<.05$)
28	-.14	.17	-.07
29	.33 ($p<.01$)	.37 ($p<.05$)	.30 ($p<.01$)
30	.00	-.03	.04

An examination of Table III.5 shows that 13 items correlate significantly in the case of male subjects, 12 in the case of female subjects, and 17 in the case of all subjects, the latter being the most important basis for taking corrective action in respect of the Scale. The indices that have reached significance compare favourably with indices given from e.g., the Nowicki-Strickland (1973) scale.

Table III.6 shows a rearrangement of the data in the last column of Table III.5 in terms of the 15 sources of reinforcement control, and type of reinforcement (positive-negative) relating

to each of the sources. This makes it easier to determine which one of a positive-negative pair of items needs attention.

TABLE III.6: C.A.S.C. Biserials in terms of Source and Quality of Reinforcement - First Validation Attempt.

Source	Items	Positive Item r bis	Items	Negative Item r bis
Father	21	.39 ($p<.001$)	14	.20 ($p<.05$)
Mother	6	.12	12	.35 ($p<.001$)
Police	13	.36 ($p<.001$)	4	.43 ($p<.001$)
Teacher	5	.22 ($p<.05$)	29	.30 ($p<.01$)
Siblings	8	-.11	1	.18 ($p<.10$)
Luck	30	.04	15	.07
Peers	19	.08	10	.05
Sex Partner	11	.07	26	-.01
Self	28	-.07	18	.23 ($p<.05$)
Pop/T.V. Star	9	.09	25	.26 ($p<.01$)
Family Doctor	24	.19 ($p<.10$)	27	.22 ($p<.05$)
Domestic animal	20	.15	17	.25 ($p<.05$)
Physical Environment	2	.27 ($p<.01$)	16	.16
Institutions	23	.38 ($p<.001$)	22	.18 ($p<.10$)
Inanimate objects	7	.10	3	.45 ($p<.001$)

Table III.6 shows clearly that negative social reinforcement items appear to be more consistent and more effective (11 items effective) than positive social reinforcement items (6 items effective). This was also the experience of Crandall et al. (1965), and seems consistent with the findings of Brackbill and O'Hara (1958), Sullivan (1960), and Meyer and Offenbach (1962) that negative reinforcements are more effective than positive ones.

In principle, the C.A.S.C. should have no correlations with social desirability measures. In practice, however, as most locus of control scale constructors have found, that ideal is never fully attained. As stated earlier, the Crandall Children's Social Desirability Scale (C.S.D.S.) was administered to 58 of the boys who scored the C.A.S.C. The C.A.S.C - C.S.D.S. relations for three age groups are shown in Table III.7 below.

TABLE III.7: C.A.S.C. - C.S.D.S. Correlations

Subject Groups	Correlation Indices
All (58) Subjects (Males)	.45 ($p<.001$)
11/12 year olds	.46 ($p<.05$)
13 year olds	.12 (ns)
14 year olds	.57 ($p<.01$)

Table III.7 shows that apart from the index for 13 year olds, those for the other groups are more significant than expected. These indices, however, give very little information on how the C.A.S.C. could be modified to reduce social desirability response tendencies. So, a correlation of each C.A.S.C. item with the C.S.D.S. was considered necessary, and as Table III.8 shows, 9 out of the 30 items are the most susceptible to social desirability responses. However, 6 out of the 9 susceptible items happen also to be those with the highest biserial correlation indices, and this poses a dilemma. Nontheless, compared with figures published by Rotter (1966), Crandall et al. (1965), and Nowicki and Strickland (1973), the indices for the C.A.S.C. appear reasonable. Efforts will still be made to improve the situation.

TABLE III.8: Correlations of each C.A.S.C. Item with the C.S.D.S.

Items	Indices	Items	Indices
1	.05	16	-.03
2	.01	17	-.02
3	.33 ($p<.05$)	18	.21
4	.30 ($p<.05$)	19	.16
5	.29 ($p<.05$)	20	.25 ($p<.10$)
6	.24 ($p<.10$)	21	.46 ($p<.001$)
7	.09	22	-.22
8	-.20	23	.38 ($p<.01$)
9	.41 ($p<.01$)	24	.07
10	.07	25	-.08
11	.03	26	-.08
12	.11	27	.09
13	.35 ($p<.01$)	28	-.02
14	.03	29	.13
15	.23	30	-.08

Rotter (1975) has given a number of qualities that items had to have to deserve inclusion in his (1966) scale. Thus: "-------, those items were included in the measure (a) that correlated with at least one of two criteria, (b) that had low correlations with the Marlowe - Crowne Social Desirability Scale, (c) for which both alternatives were selected by college students at least 15% of the time, and (d) that correlated with the total of the other items with that item removed." p.69

The C.A.S.C. as the data above have revealed, has correlated significantly with one criterion, namely, those ten most consistent items of the Rotter scale chosen for this purpose (cf. Appendix B for the Rotter items in question). Its items have correlated fairly lowly with a social desirability scale, namely, the Crandall (1965) Social Desirability Scale for Children (C.S.D.S.), a simplified form of the Marlow - Crowne. While its internal consistency indices compare favourably with those of existing locus of control scales, mean internality - externality scores show that, for all target age groups, its difficulty level is too low, as is its discriminant power. Again, while a majority of the C.A.S.C. items had significant biserial correlations, corrective action needs to be taken with respect to the rest. Thus, the revised C.A.S.C. was expected to: (a) have a higher difficulty level, (b) have an even lower correlation with social desirability, (c) have higher biserial correlations for its items.

Selection of Items for the Second Version:

In the selection of items for the revised (second) version of the C.A.S.C., the following steps were therefore taken:

(a) Keeping in mind the statistical information already obtained, and making sure that reference to the original sources of reinforcement control (eg. father, mother, police) was maintained, an attempt was then made to reconstruct each item

as a conditional sentence that appeared neither childish nor overly complex but at the same time relevant in content and intellectually appealing to a variety of adolescents and teenagers. An example of an item from version one reconstructed for version two follows:

From version one: Supposing your mum always came home with some presents for you, would it be (a) because you are a good boy or (b) because she is just following other mums?

From version two: If your mum decided to come home with some presents for you, would it be (a) because it was one of her happy days, or (b) because of what you are? This way, the difficulty level was raised somewhat. A copy of the first version of the C.A.S.C. (Form B) appears as Appendix AI below.

(b) In order to reduce the social desirability contents of the items, an attempt was made to prevent items being perceived by subjects as reflecting any need to show oneself or the relevant source of reinforcement control in "goodlight". In other words, the effort was to prevent subjects "faking good."

(c) To improve biserial correlations an attempt was made to keep the reconstructed items faithful to the concept of internal-external locus of control.

(ii) Second Validation Attempt.

Subjects for this second validation attempt were 27 males and 19 females, aged between 11 and 18, from two large housing estates in a largely working class area of North London. They were administered the revised version of the C.A.S.C. along with the Crandall (1965) Social Desirability Scale for Children, in small groups of three to six, as they became available and willing

to be tested. Even though the balance is still on the side of internality (a situation not unique to the C.A.S.C. - cf. Nowicki and Strickland 1973), data derived from these subjects show definite improvements on the first version of the C.A.S.C. Table III.9 shows mean internal-external scores for both the C.A.S.C. and the Rotter scale, with means from the first validation attempt given in brackets as a contrast. It is to be noted that the sample size in the first validation attempt was virtually double that for this second attempt, and this gives added value to whatever improvements have been achieved.

TABLE III.9: Mean I - E scores for the C.A.S.C. and the Rotter in the Second Validation Attempt.

	C.A.S.C.		Rotter	
Subgroups	I	E	I	E
All subjects (N = 46)	18.02 (21.67)	11.98 (8.33)	4.98 (4.83)	5.02 (5.17)
All Males (N = 27)	16.96 (22.51)	13.04 (7.49)	5.00 (4.81)	5.00 (5.19)
11/13 year old Males (N = 16)	16.88(23.25)	13.12 (6.75)	4.63 (4.75)	5.37 (5.25)
14/18 year old Males (N = 11)	17.09(21.41)	12.91 (8.59)	5.55 (4.89)	4.45 (5.11)
All Females (N = 19)	19.53 (21.34)	10.47 (8.66)	4.95 (4.97)	5.05 (5.03)
11/13 year old Females (N=11)	19.91 (22.44)	10.09 (7.56)	4.36 (5.20)	5.64 (4.80)
14/18 year old Females (N=8)	19.00 (17.43)	11.00 (12.57)	5.75 (4.14)	4.25 (5.86)

The only group from the first validation sample that had C.A.S.C. scores comparable to scores in this attempt, was the group of delinquent females (N = 7, ages 14 - 18). Improvements were evident also in validity, reliability and social desirability indices.

Whereas the validity index obtained for the first version of the C.A.S.C. was .24 ($p < .05$, df = 97), the index for this second version is .30 ($p < .05$, df = 44). Table III.10 shows

validity indices for different groupings of the sample for this second attempt. While the scale continues to

TABLE III.10: Validity Co-efficients of the C.A.S.C. in the Second Validation Attempt

Groupings	C.A.S.C. - Rotter Relations
All subjects (N = 46)	.30 ($p<.05$)
All males (N = 27)	.46 ($p<.02$)
11/13 year old males (N = 16)	.62 ($p<.02$)
14/18 year old males (N = 11)	.27 (ns)
All Females (N = 19)	.10 (ns)
11/13 year old Females (N = 11)	.38 (ns)
14/18 year old Females (N = 8)	-.19 (ns)

be most valid for the younger age groups, the validity for females has improved somewhat, with the biggest improvement coming from the younger girls. It seems clear that with a larger sample other indices would have been higher.

Improvements in the reliability indices were most evident with the positive-negative split of items. Tables III.11 and III.12 show relevant indices in terms of subject groupings. The Spearman-Brown formula was applied once again. While the

TABLE III.11: Positive-Negative Split of C.A.S.C. Items for Reliability

Groupings	Indices
All subjects (N = 46)	.72 ($p<.001$)
All males (N = 27)	.63 ($p<.001$)
11/13 year old males (N = 16)	.70 ($p<.01$)
14/18 year old males (N = 11)	.60 ($p<.05$)
All Females (N = 19)	.84 ($p<.001$)
11/13 year old females (N = 11)	.69 ($p<.02$)
14/18 year old females (N = 8)	.93 ($p<.001$)

TABLE III.12: Odd-Even Split of C.A.S.C. Items for Reliability

Groupings	Indices
All subjects (N = 46)	.34 ($p<.02$)
All males (N = 27)	.42 ($p<.05$)
11/13 year old males (N = 16)	.50 ($p<.05$)
14/18 year old males (N = 11)	.29 (ns)
All Females (N = 19)	.04 (ns)
11/13 year old females (N = 11)	.19 (ns)
14/18 year old females (N = 8)	-.18 (ns)

odd-even reliability indices for males are modest, they are obviously low for females. The reason is not immediately obvious in view of the all round satisfactory indices for the positive-negative split of items.

As for the first version of the C.A.S.C., biserial correlations were computed for each of the 30 items of the second version. Fewer items (11) of the second version have correlated significantly with the total as compared with 17 items of the first version. But this is to be set against two important points: (a) the sample size for the second version was smaller than that of the first; (b) a look at the last column of Table III.13 shows that ten more items have modest but non-significant correlations (.20 or over) with the total. When those two points are considered, it becomes evident that improvements have actually been recorded. Those items with high but non-significant biserials will count towards the selection of items for the version of the scale which were used for the main study, other things, especially social desirability indices considered.

As stated earlier, an important feature of the C.A.S.C. is the conceptualization of internal-external control in terms of 15 sources of control expectancy. A re-arrangement of the data in the last column of Table III.13 in terms of those 15

TABLE III.13: Biserial Correlations of the C.A.S.C. In the Second Validation Attempt

Items	Males (N = 27)	Females (N = 19)	M + F (N = 46)
1	.05	.08	.22
2	.20	.20	.20
3	-.07	-.20	.07
4	.04	.10	.20
5	.40 ($p<.05$)	.43 ($p<.10$)	.24 ($p<.10$)
6	.10	.05	.20
7	.21	.00	.30 ($p<.05$)
8	.40 ($p<.05$)	.33	.22
9	.12	.04	.11
10	.20	.30	-.09

TABLE III.13: Continued

Items	Males (N = 27)	Females (N = 19)	M + F (N = 46)
11	-.20	-.10	-.04
12	.07	.05	.30 (p<.05)
13	.04	-.03	-.00
14	.30	.08	.33 (p<.02)
15	.22	.30	.31 (p<.05)
16	-.23	-.34	-.30 (p<.05)
17	.10	.22	.09
18	-.09	.12	.05
19	.30	.23	.47 (p<.001)
20	.14	.13	.21
21	.20	.02	.30 (p<.05)
22	.12	.44 (p<.10)	.22
23	.53 (p<.01)	.52 (p<.02)	.43 (p<.01)
24	.30	.30	.20
25	.46 (p<.02)	.49 (p<.05)	.30 (p<.05)
26	.20	.20	.02
27	.47 (p<.02)	.50 (p<.05)	.34 (p<.02)
28	.05	.33	.21
29	.02	-.07	.07
30	.08	-.15	-.23

sources, and in terms of the quality of reinforcement (positive-negative) relating to each source, is presented in Table III.14. From this it can be

TABLE III.14: C.A.S.C. Biserials in terms of Source and Quality of Reinforcement - Second Validation Attempt.

Source	Items	Positive Item r bis	Items	Negative Item r bis
Father	21	.30 (p<.05)	14	.33 (p<.02)
Mother	6	.20	12	.30 (p<.05)
Police	13	-.00	4	.20
Teacher	5	.24 (p<.10)	29	.07
Siblings	8	.22	1	.22
Luck	30	-.23	15	.31 (p<.05)
Peers	19	.47	10	-.09
Sex Partner	11	-.04	26	.02
Self	28	.21	18	.05
Pop/T.V. Star	9	.11	25	.30 (p<.05)
Family Doctor	24	.20	27	.34 (p<.02)
Domestic animal	20	.21	17	.09
Physical Environment	2	.20	16	-.30 (p<.05)
Institutions	23	.43 (p<.01)	22	.22
Inanimate objects	7	.30 (p<.05)	3	.07

noticed that negative reinforcement items still appear to be more effective, but only in regard to the number of significant items (excluding the high but non-significant ones).

The Crandall (1965) Children's Social Desirability Scale (C.S.D.S.) was again administered to the subjects. In terms of lack of relationship with the social desirability scale, the second version of the C.A.S.C. is far superior to the first version. Table III.15 shows C.A.S.C. - C.S.D.S. relations for various groupings of the sample, while Table III.16 shows the correlation of each C.A.S.C. item with the C.S.D.S.

TABLE III.15: C.A.S.C. - C.S.D.S. Correlations

Subject Groupings	Correlations
All subjects (N = 46)	-.02
All males (N = 27)	-.02
11/13 year old males (N = 16)	-.18
14/18 year old males (N = 11)	.27 (ns)
All females (N = 19)	.03
11/13 year old females (N = 11)	.47 (ns)
14/18 year old females (N = 8)	-.55 (ns)

TABLE III.16: Correlations of each C.A.S.C. Item with the C.S.D.S.

Items	Indices	Items	Indices	Items	Indices
1	-.19	11	.02	21	-.42 ($p<.01$)
2	.16	12	-.02	22	.07
3	-.12	13	-.19	23	-.08
4	.23	14	-.30 ($p<.05$)	24	-.07
5	-.29	15	-.11	25	.07
6	.17	16	.08	26	.07
7	.03	17	.04	27	.25
8	.15	18	.01	28	.06
9	.06	19	-.02	29	.21
10	.08	20	.06	30	.27

Finally, as the stated aims of this study are both substantive and methodological, it is considered that with the considerably improved validity, reliability, biserial and social desirability indices the scale can be organized into a form good enough for the substantive part of the study. The C.A.S.C.

so re-organized still remains an experimental scale subject to further improvements. As such nothing outstanding can be claimed for it yet.

Because of the expected lack of relations of the second version of the C.A.S.C. with social desirability, as many of its items as possible were included in the scale organised for the substantive study. This means that all the items with significant biserials and those with high but non-significant biserials (those with r bis = .20 and over) in relation to male, female, and male and female subgroupings, were included. On this basis, 26 out of 30 items qualify for selection. The remaining four items - 9, 13, 18, and 29 - being drawn from the first version in as much as they qualify in terms of r bis. Reference to results of the first validation attempt shows that their r bis are satisfactory, and in terms of social desirability, only items 9 and 13 have indices high enough to reach the .05 level of significance. This level is tolerable in comparison with data recorded, for instance, by Rotter (1966) and Nowicki and Strickland (1973). A copy of the C.A.S.C. for the main study appears in Appendix A.

(iii) Further Information on Validation

1. After administering the C.A.S.C. to the 36 fourteen to fifteen year old boys from a central London grammar school (c.f. Section B, below) for purposes of the substantive study, a second administration was done four weeks later for 26 of that same group of 36 who were able to return. The second administration was for purposes of test-retest reliability. As a result, a correlation of 0.604 ($df = 24$, $p < .001$, two-tailed) was obtained.

2. A validity index of 0.486 ($df = 24$ $p < .02$, two-tailed) was obtained with the above group, using the same selection of Rotter I-E Scale items used before (cf. Appendix B.)

Such correlations of the C.A.S.C. with the Tennessee Self Concept Scale as will appear in the results section of this study may also be regarded as validity indices.

SECTION B: Procedure for Substantive Study

(1) Subjects: There were 335 subjects altogether, and they were constituted as experimentals (delinquents) and controls as follows:

Experimentals

Experimental subjects were constituted as follows:

(a) 27 boys aged 14 to 16 from a Remand Home in London;

(b) 24 boys aged 14 to 16 from a Community Home in a suburb of London;

(c) 39 boys aged 17 to 21 from a closed borstal institution outside London;

(d) 37 girls aged 17 to 21 from a closed borstal institution outside London. (However, in order to complete cells for analysis of variance, hairs were split somewhat by selecting from this group 11 subjects who were between one and two months short of 17 years).

(In compliance with the Official Secrets Act, further details about the above institutions and their inmates may not be given. For the purposes of the present study, it is considered that these details are not necessary). However, the legal provisions governing the institutionalization of young people in these institutional categories need to be touched on somewhat in order to provide a base for the interpretation of any results that may be relevant to this aspect of subject groupings

The Children and Young Persons Act 1969 (cf. Public General Acts 1969, Part II. Chapter 54) amended previous legislations relating to children and young persons. The

provisions of that Act as they apply to the young people drawn from a remand home for this study state:

"Where a Court (a) remands or commits for trial a child charged with homicide or remands a child convicted of homicide, (b) or remands a young person charged with or convicted of one or more offences or commits him for trial or sentence, and he is not released on bail, then, -----, the court shall commit him to the care of a local authority in whose area it appears to the court that he resides or that the offence or one of the offences was committed. If the Court aforesaid certifies that a young person is of so unruly a character that he cannot safely be committed to the care of a local authority-------, then if the court has been notified by the Secretary of State that a remand centre is available for the reception from the court of persons of his class or description, it shall commit him to a remand centre and, if it has not been so notified, it shall commit him to prison." - 23 (1 and 2). According to this Act, only young persons of 18 years of age or under may be kept in remand homes. The subjects drawn from this category for the study were aged between 14 and 16 years.

The provisions of the Act as they apply to the young people drawn from a community home for this study states:

"The power to give directions under Section 53 of the Act of 1933 (under which young offenders convicted on indictment of certain grave crimes may be detained in accordance with directions given by the Secretary of State.) shall include power to direct detention by a local authority specified in the directions in a home so specified which is a community home provided by the authority or a controlled community home for the management, equipment and maintenance of which the authority are responsible; but a person shall not be liable to be detained in the manner provided by this section after he attains the age of nineteen," - 30(1). The subjects drawn from this

category for the study were, like those in the preceding category, aged between 14 and 16 years. What needs emphasis in respect of this category is that the environment in which the children are kept is meant to simulate the family atmosphere as much as possible with the staff exhibiting several parental characteristics. "Openess" is far more characteristic of the community home system than any of the other systems for the transformation of young offenders; this is in order that a sense of freedom with responsibility may be inculcated. Community homes now replace or are merged with what used to be termed Approved Schools.

It is clear from the provisions of the 1969 Act that the children in both remand homes and community homes are regarded as offenders of some sort. It is also clear that local authorities assume enormous responsibilities for the care and retraining of these children. Co-ordination of services nationally is understood to have passed from the Home Secretary's Prison Department to the Secretary of State for Health and Social Security.

The link between the remand home and the community home on the one hand and borstal institutions which are still co-ordinated by the Prison Department of the Home Office on the other, is indicated to some degree in the following provisions of the 1969 Act:

"Where a person who has attained the age of fifteen is for the time being committed to the care of a local authority by a care order (other than an interim order) and accommodated in a community home and the authority consider that he ought to be removed to a borstal institution under this section, they may with the consent of the Secretary of State bring him before a juvenile court. If the court before which a person is brought in pursuance of this section is satisfied that his behaviour is such that it will be detrimental to the persons accommodated in any community home for him to be accommodated there, the court may order him to be removed to a borstal institution." - 31 (1 and 2).

The borstal system itself from which the rest of the experimental subjects of this study came, is a form of training for young offenders of 21 years of age and under, who are considered unsuitable for accommodation in community homes. It is a form of training ordered instead of imprisonment as understood in respect of offenders over the age of 21 at the time of conviction. Clearly, then borstal inmates are young offenders who are considered criminally more sophisticated than the inmates of community homes, but who, by virtue of their ages are kept away from adult prisons. The borstal boys and girls in this study were aged between 17 and 21 years.

Controls

Control subjects were constituted as follows:

(a) 36 boys, aged 14 to 15, from a central London Grammar School;

(b) 26 boys, aged 16 to 18, from a central London Grammar School;

(c) 25 boys aged 16 to 18, from a north London Comprehensive School;

(d) 24 boys, aged 17 to 20, from an east London Technical College;

(e) 10 boys, aged 16 to 18, who assembled at Bedford College, University of London, as interviewees for University places;

(g) 26 girls, aged 14, from a private fee-paying school in London;

(h) 17 girls, aged 16 to 18, from a private fee-paying school in London;

(i) 25 girls, aged 15, from an all-girls school in a working class district of north London;

(j) 19 girls, aged 16 to 19, who assembled at Bedford College, University of London, as interviewees for University places.

The appellations and sitings of all but one (the private girls school) of the educational establishments from which control subjects were drawn did not, however, mean that the pupils in them were of a homogeneous class structure. Accordingly, in order to be able to test the hypothesis (Section C, Chapter I) referring to social class differences, the Registrar General's Classification of Occupations (Office of Population Censuses and Surveys, 1970) was used to classify the subjects in appropriate social class groups. Four social class groupings (I to IV) were discerned and these were regrouped for ease of computational handling into two - Classes I and II together, and Classes III and IV together. The resulting redistribution of control subjects was as in the following table:

TABLE III: 17: Control Subjects by age, sex and Social Class.

	Social Classes I & II		Social Classes III & IV	
	Males	Females	Males	Females
14 to 16 Year olds	12	37	31	24
Those aged 17+	38	22	40	4

Of the 335 subjects there were, therefore 127 delinquents - 90 boys and 37 girls - and 208 controls, - 121 boys and 87 girls. It should be added, that an examination of the relevant occupational/educational information on the delinquents showed that they were either in social class III or social class IV.

(ii) Tests and Test Administration:

The two tests used for the substantive part of the study

were the Causal Attribution Scale for Children (C.A.S.C.)drawn up for this study, and the Tennessee Self Concept Scale (Fitts 1965). In all instances, the two tests were administered successively to groups. In the case of experimental subjects, administration was to groups of between six and ten - sizes considered by the institutional authorities to be manageable in the contexts of their institutional class sizes. In the case of controls, administration was to normal or near normal class sizes of up to 30. After obtaining the assistance of staff in bringing subjects into class-rooms, the author personally administered the tests. Average testing time was 30 minutes.

(iii) Statistical Analysis:

The statistics considered to be appropriate and effective for the study were:

(a) a 2 x 2 x 3 analysis of variance using the unequal cell frequencies method (Winer, 1971).
(b) the Student's t-test for studying delinquent/non-delinquent preferences for positive and negative responses to sources of reinforcement control.
(c) the Chi Square test
(d) the Pearson Product moment correlation coefficient for the study of relationships between C.A.S.C. and self-concept scores.

CHAPTER IV: Results

In Chapter I, Section C above, the aims of this study were stated as being both substantive and methodological. The methodological aspect has been presented in Chapter III. The present Chapter deals with the substantive aspect which concerns the extent to which young people conventionally described, adjudicated and institutionalized as delinquents, as against groups of non-delinquents of equivalent age range, regard event-comes in their life spaces as attributable to themselves and other relevant people, things and situations, as 'origins' of such outcomes. This aspect also includes information concerning the relationships of subjects' control orientations to their levels of self-esteem. Accordingly, results are being presented in two main sections: one section concerns differences and the other concerns relationships.

SECTION A: Results concerning Differences

(i) Delinquency/Non-delinquency and Locus of Control

The first and main hypothesis of this study was that delinquents would be significantly less internal (more external) in control orientation than control subjects. Table IV.1 provides mean internal locus of control scores for all subject groupings. It was from these means that a 3 x 2 x 2 analysis of variance with unequal cell frequencies (cf. Winer, 1971) was carried out to test this, among other hypotheses concerned with differences in locus of control. Table IV.2 shows a summary of that analysis. It needs to be explained from the outset that for purposes of the analysis, social class groupings (cf. Chapter III, Table III.17) were renamed social categories in order to be able to conveniently accommodate delinquent

subjects, who, as noted earlier, fell into social classes III and IV. Subjects in social classes I and II were, therefore, put into Social Category One (C1); subjects in social classes III and IV were put into Social Category Two (C2); and delinquents were put into Social Category Three (C3). Thus, the analysis was a categories x sex x age one.

It is evident from Table IV.2 that the categories main effect was highly

TABLE IV.1: Mean Internal Locus of Control Scores for all Subject Groupings

	Younger Subjects		Older Subjects	
	Males	Females	Males	Females
C1	19.417	21.324	20.395	21.455
C2	20.032	20.708	20.375	20.750
C3	17.843	19.000	20.256	19.038

TABLE IV.2: Locus of Control in Social Categories, Sex and Age Analysis

Source	SS	df	MS	F	p
Categories (C)	106.111	2	53.056	6.759	$< .005$
C_1 vs. C_2	1.072	1	1.072	0.137	NS
$C_1 + C_2$ vs. C_3	105.039	1	105.039	13.386	$< .001$
Sex (S)	22.107	1	22.107	2.816	$< .10$
Age (A)	22.107	1	22.107	2.816	$< .10$
C x S	19.726	2	9.863	1.256	NS
C x A	9.523	2	4.761	0.607	NS
S x A	17.685	1	17.685	2.253	NS
C x S x A	9.523	2	4.761	0.607	NS
Between Cells	415.880	1	415.880	52.978	$< .001$
Within Cells	2526.760	322	7.847		
TOTAL	2942.639	334			

significant. However, this gives little information as to the relative parts played by social class and delinquency, and, it is of the highest interest in this study that such information should be gained. To achieve this, a partitioning of the categories variance was carried out. It is clear from Table IV.2 that, after the partitioning, the contrast C_1 vs C_2 was found to be non-significant, whereas the contrast $C_1 + C_2$ vs C_3 was found to be highly significant indicating in a definite manner that social class contributed an infinitessimally small part toward the differences in locus of control and that a very high proportion of the variance was due to delinquency. Thus the first main hypothesis was strongly upheld.

(ii) Delinquency/Non-delinquency and Self-esteem

The Tennessee Self Concept Scale (T.S.C.S.) was administered to the same subjects at the same sitting. Thus in close correspondence with the first main hypothesis, the second hypothesis was that delinquents would be significantly lower in self-esteem than controls. The same three-way analysis of variance was carried out with the self-esteem data.

TABLE IV.3: Mean Self-Esteem Scores for all Subject Groupings.

	Younger Subjects		Older Subjects	
	Males	Females	Males	Females
C_1	338.000	333.351	351.500	323.318
C_2	340.839	338.875	343.350	292.250
C_3	303.353	312.727	323.487	313.692

TABLE IV.4: Self-Esteem in a Social Categories Sex and Age Analysis

Source	SS	df	MS	F	p
Categories (C)	19039.134	2	9519.567	7.848	<.001
C_1 vs C_2	2023.005	1	2023.005	1.668	NS
$C_1 + C_2$ vs C_3	17016.129	1	17016.129	14.0289	<.001
Sex (S)	10556.449	1	10556.449	8.703	<.005
Age (A)	541.609	1	541.609	0.447	NS

TABLE IV·4: Continued

Source	SS	df	MS	F	p
C x S	5995.147	2	2997.574	2.471	NS
C x A	9677.653	2	4838.827	3.989	<·05
S x A	11955.115	1	11955.115	9.856	<·005
C x S x A	3078.470	2	1539.235	1.269	NS
Between Cells	85666.885	1	85666.885	70.628	<.001
Within Cells	390563.488	322	1212.930		
TOTAL	476230.373	334			

Table IV.3 provides mean self-esteem scores for all subject groupings, and Table IV.4 shows a summary of the resulting analysis of variance. Turning once more to the categories main effect in Table IV.4, one notices that there was another highly significant result. A partitioning of the categories variance also showed that a non-significant part was played by social class, while a highly significant part was played by delinquency. The second hypothesis of the study was thus upheld, making it evident, that the T.S.C.S. and the C.A.S.C. were in good agreement in respect of this aspect of the study. Other aspects of the self-esteem data will be discussed in parts (iv) (vi) and (ix) of this chapter and more fully in Chapter V.

(iii) Intra-Delinquent Group Differences in Locus of Control

This is a feature of the study that is not only related to the above results, but has acquired some right to prominence. When the sampling for the study was planned, it was not realized that institutional differences within the delinquent group would feature prominently. When the derivation of scores were completed, however, it seemed clear that some useful information could be gained if delinquents were treated by institutions as well as in combination. Thus, Scheffe's (1953) method for post hoc contrasts in an analysis of variance was employed in this

context. Table IV.5 shows the results. Not surprisingly, in view of

TABLE IV.5: Institutional Differences in Locus of Control

Comparisons	Means	t from Post hoc Comparisons	Pre-determined t and Levels of Significance		
			2.793 .05	3.368 .01	3.674 .005
Remand Home Subjects vs. Community Home Subjects	16.26 19.63	3.036	S	NS	NS
Remand Home Subjects vs Borstal Boys	16.26 20.26	4.040	S	S	S
Remand Home Subjects vs Borstal Girls	16.26 19.03	2.764	NS	NS	NS
Community Home Subjects vs Borstal Boys	19.63 20.26	0.615	NS	NS	NS
Community Home Subjects vs Borstal Girls	19.63 19.03	0.579	NS	NS	NS
Borstal Boys vs Borstal Girls	20.26 19.03	1.355	NS	NS	NS

NB. S = Significant; NS = non-significant.

age differences, remand home delinquents (age range 14 to 16) were found to be significantly more external in control orientation than borstal boys (age range 17 to 21, with 26 out of 39 of them age 19 to 21). But surprisingly, in view of equivalence in age range (14 to 16) remand home delinquents were found to be significantly more external than community home delinquents, who were even more surprisingly non-significantly different from both borstal boys and borstal girls - the latter aged 17 to 21

with 12 of the 37 aged 19 to 21. Moreover, borstal girls were slightly lower in mean score (cf. Table IV.5) than community home delinquents, and more external, though non-significantly so, than borstal boys - a more comparable group in terms of age and institutional categorization. It is also noteworthy that borstal girls were not significantly different from remand home delinquents though they scored in a more internal direction than the latter.

Thus, apart from revealing intra-delinquent group differences, Table IV.5 also shows that female delinquents were not significantly more external in control orientation than male delinquents, although in comparison with their male borstal counterparts, especially, female delinquents nontheless had a lower mean score.

(iv) Intra-Delinquent Group Differences in Self-Esteem

The same post hoc contrasts as above were carried out in respect of the self-esteem scores of delinquent subjects. Table IV.6 shows the results of those contrasts.

TABLE IV.6: Institutional Difference in Self-Esteem

Comparisons	Means	t from Post hoc Comparisons	Pre-determined t and Levels of Significance
Remand Home Subjects vs Community Home Subjects	297.444 310.000	0.910	2.793 .05 NS
Remand Home Subjects vs Borstal Boys	297.444 323.487	2.115	NS
Remand Home Subjects vs Borstal Girls	297.444 313.405	1.281	NS

TABLE IV.6: Continued

Comparisons	Means	t from Post hoc Comparisons	Pre-determined t and Levels of Significance
Community Home Subjects vs Borstal Boys	310.00 323.487	1.058	NS
Community Home Subjects vs Borstal Girls	310.00 313.405	0.264	NS
Borstal Boys vs Borstal Girls	323.487 313.405	0.893	NS

Unlike what happened in respect of locus of control, remand home subjects were not significantly different in self-esteem from delinquents in other institutions. Nor did the other contrasts show any significant effects. However, a look at the mean scores in Table IV.6 shows, without doubt that the pattern follows almost completely the pattern of locus of control mean scores. Moreover, the performance of the younger groups of delinquents, especially the community home ones, is noteworthy.

(v) Sex Differences in Locus of Control

Although a major aspect of sex differences has been dealt with in the analysis, as above, of intra-delinquent group differences, a separate look at sex differences still seems worthwhile. A look at the sex main effect in Table IV.2 shows that girls were more internal than boys at only the .10 level of significance. Moreover, post hoc contrasts shown in Table IV.7 reveal no intra-control group significant sex differences, reflecting the low probability level attained in the sex main effect. However, it is

TABLE IV.7: Sex Differences between Control Groups in Locus of Control

Comparisons	Means	t from Post hoc Comparisons	Pre-determined t and level of Significance
			2.793 .05
Males in Classes I & II vs Females in Classes I & II	20.160 21.373	1.592	NS
Males in Classes I & II vs Males in Classes III & IV	20.160 20.225	0.089	NS
Males in Classes I & II vs Females in Classes III & IV	20.160 20.716	0.594	NS
Females in Classes I & II vs Males in Classes III & IV	21.373 20.716	1.645	NS
Females in Classes I & II vs Females in Classes III & IV	21.373 20.716	0.726	NS
Males in Classes III & IV vs Females in Classes III & IV	20.225 20.716	0.555	NS

also evident in Table IV.7 that females of both social class levels had higher internal mean scores than males of both social class levels.

(vi) Sex Differences in Self-Esteem

It has already been shown above (Table IV.6) that the self-esteem scores of delinquent girls were lower than those of delinquent boys of comparable age range and institutional category. This seemed to be in line with the corresponding locus of control findings. However, with regard to the self-esteem scores of non-delinquent girls to which the sex main effect in Table IV.4 could be regarded as residually relevant, the situation was reversed. Whereas female controls had higher internality scores than male controls, Table IV.4 shows that male controls were quite significantly higher in self-esteem than female controls. Table IV.8 clarifies the situation further with results of post hoc comparisons of control groups.

TABLE IV.8: Sex Differences between Control Groups in Self-Esteem

Comparisons	Means	t from Post hoc Comparisons	Pre-determined t and level of Significance		
			2.793 .05	3.368 .01	3.674 .005
Males in Classes I & II vs Females in Classes I & II	348.26 329.61	3.953	S	S	S
Males in Classes I & II vs Males in Classes III & IV	348.26 342.254	1.342	NS	NS	NS
Males in Classes I & II vs Females in Classes III & IV	348.26 332.214	2.877	S	NS	NS
Females in Classes I & II vs Males in Classes III & IV	329.61 342.254	2.927	S	NS	NS

TABLE IV.8: Continued

Comparisons	t from Means	t from Post hoc Comparisons	Pre-determined t and level of Significance		
Females in Classes I & II	329.61				
vs		0.493	NS	NS	NS
Females in Classes III & IV	332.214				
Males in Classes III & IV	342.254				
vs		2.028	NS	NS	NS
Females in Classes III & IV	332.214				

From Table IV.8 it becomes clear that males in Classes I and II were significantly higher in self-esteem than both the females of their class level and the females of social classes III and IV. Males in Classes III and IV were also significantly higher in self-esteem than females in classes I and II but not females in classes III and IV, though they still had a higher mean score than the latter group of females. (the incidental showing of comparisons by social class in Tables IV.7 and IV.8 also confirms the results of partitioning the categories main effects in Tables IV.2 and IV.4, to the effect that social class differences were non-significant. However, the fact that females in social classes III and IV had a slightly higher mean self-esteem score (TABLE IV.8) than females in social classes I and II, is worth remarking on - a situation not observable in respect of locus of control, cf. Table IV.7).

(vii) Social Class Differences

One could make short shift of this aspect in view of information already available in different places above. However, for the sake of systematically following the plan of the study, a formal mention of it seems necessary. The fourth hypothesis of the study was that middle-class (Category One) subjects would be significantly more internal in control orientation and higher in self-esteem than lower-class (Category Two) and delinquent subjects, while lower-class subjects would be slightly less significantly internal in control orientation and higher in self-esteem than delinquents. Tables IV.2 and IV.4 have shown that social class differences, while they existed, were nowhere near significance.

(viii) The effect of Age

Although no predictions were made in respect of the variable of age, its inclusion was an inevitable part of the nature of the study. Table IV.2 shows that the age main effect was only significant at the .10 level in regard to locus of control. In view of reports of the age-sensitivity of locus of control (Bialer, 1961; Crandall et al., 1965; Nowicki and Strickland, 1973; etc.,) the reason for this low level of significance could be inherent in the C.A.S.C. itself. However, the age main effect was also not significant in regard to self-esteem (Table IV.4).

(ix) Interactions

A glance at Table IV.2 shows that, in respect of locus of control none of the interactions (C x S; C x A; S x A; C x S x A) was significant. In respect of self-esteem,however, (cf. Table IV.4) the C x A interaction was significant at the .05 level, and the S x A interaction was highly significant at the

.005 level, but the rest of the interactions were non-significant. Table IV.9 and Figure IV.1 indicate clearly the pattern of the C x A significant interaction, while Table IV.10 and Figure IV.2 do the same for the significant S x A interaction. The combination

TABLE IV.9: Combined Self-Esteem mean Scores for the C x A Interaction

	A	
	Y	O
C_1	671.351	674.818
C_2	679.714	635.600
C_3	616.080	637.179

TABLE IV.10: Combined Self-Esteem mean Scores for the S x A Interaction

	Males	Females
Younger	982.192	984.953
Older	1018.337	929.260

of mean scores as shown in the last two tables relate to the procedure followed in working out the interaction effects, given the inequality of cell frequencies.Table IV.9 and Figure IV.1 show that in respect of subjects in Categories One and Two the bigger difference occurred between the older subjects, while in respect of Categories Two and Three the bigger difference occurred between the younger subjects. In respect of Categories One and Three, however, substantial differences appeared between both the younger and the older subjects.

Table IV.10 and Figure IV.2 showed that while the self-esteem of males rose with age, that of females dropped sharply with age, thus making the difference bigger between the older subjects.

Figure IV.1: The C x A Interaction Pattern

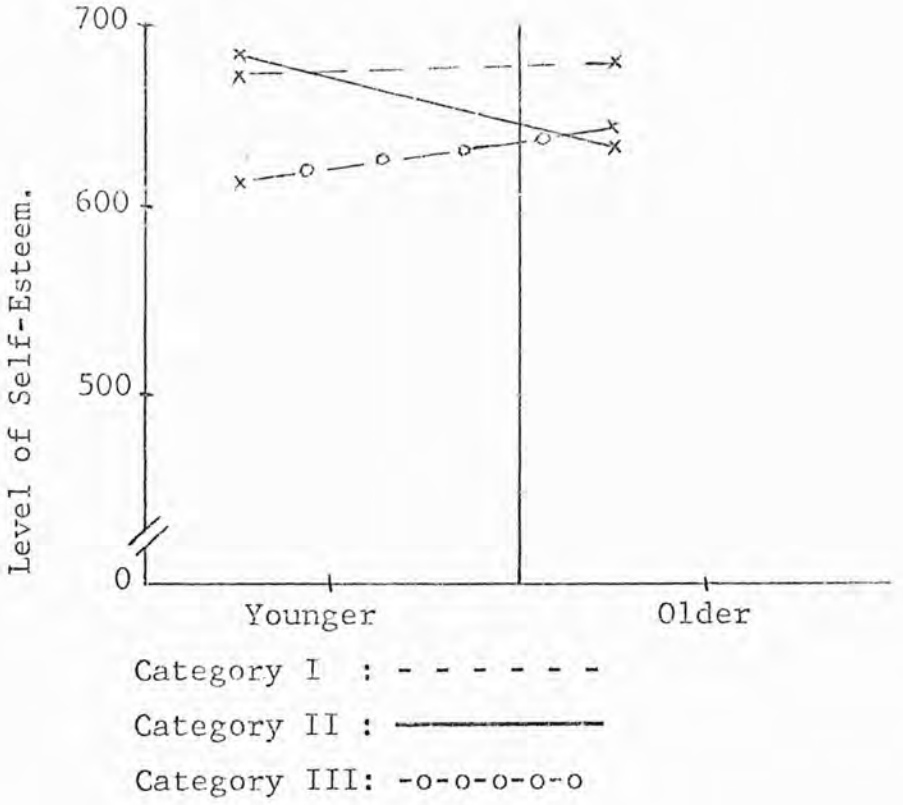
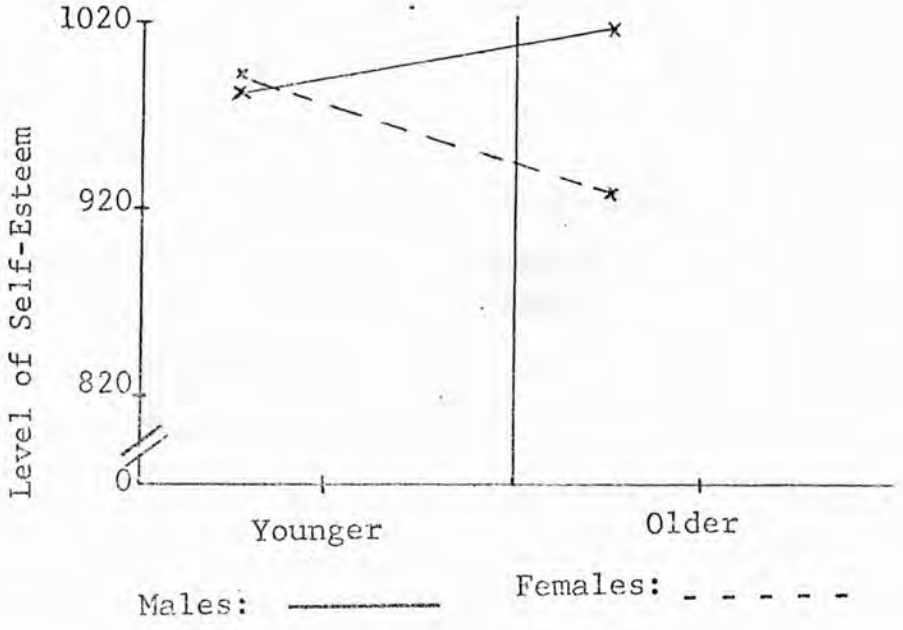


Figure IV.2: The S x A Interaction Pattern



A final glance at Tables IV.2 and IV.4 shows that in respect of both the locus of control and the self-esteem constructs, the between cells variances were highly significant, thus helping to rule out random sampling fluctuations as a major contributor to the significant differences found.

(x) Responses to Individual Items of the C.A.S.C.

An analysis was made of group differences in responses to individual items of the C.A.S.C. In view of the experimental nature of the C.A.S.C., this additional analysis was seen as helpful in showing up the discriminant strengths and weaknesses of individual items, thereby providing insights into any prospective research and/or clinical application of the rationale behind the C.A.S.C. In this section, the same order of presentation is maintained. Thus the data relating to delinquency/non-delinquency will be followed by data concerning intra-delinquent group differences, sex differences, etc. The Chi square test (of a two-by-two contingency type, df = 1) was found appropriate in this case. The relevant tables of results are ordered such that the 15 sources of reinforcement control appear in the first column. The second column shows positive items of the C.A.S.C. relating to those sources, followed in the third column by corresponding chi square values. The fourth and fifth columns show negative items and corresponding chi square values respectively.

(A) Delinquents Vs. Non-Delinquents

TABLE IV.II: Delinquents Vs. Non-Delinquents

Sources	Positive Items	Chi Square	Negative Items	Chi Square
Father	21	1.73 (ns)	14	4.73($p<.05$)
Mother	6	0.71 (ns)	12	10.45($p<.01$)
Siblings	8	3.71(ns)	1	0.25(ns)

TABLE IV.II: Continued

Sources	Positive Items	Chi Square	Negative Items	Chi Square
4. Self	28	0.39(ns)	18	0.001(ns)
5. Peers	19	9.11($p<.01$)	10	20.75($p<.001$)
6. Sex Partner	11	5.76($p<.02$)	26	4.70($p<.05$)
7. Teacher	5	8.69($p<.01$)	29	2.45(ns)
8. Family Doctor	24	0.003(ns)	27	10.41($p<.01$)
9. Pop/T.V. Star	9	0.12(ns)	25	0.03(ns)
10. Police	13	16.86($p<.001$)	4	0.94(ns)
11. Institutions (School/Prison)	23	6.21($p<.02$)	22	3.24(ns)
12. Domestic Animal	20	2.87(ns)	17	7.36($p<.01$)
13. Physical Environment.	2	1.89(ns)	16	7.13($p<.01$)
14. Inanimate Object	7	0.24(ns)	3	0.01(ns)
15. Luck	30	4.07($p<.05$)	15	1.20(ns)

A preliminary and general look at Table IV.II shows in respect of which source of reinforcement control and which item/quality of reinforcement delinquents were more external than non-delinquents, and vice versa. Thus, it seems evident that delinquents were significantly more external than non-delinquents in regard to negative reinforcements emanating from the first two sources - parents. Going further down the table, one finds that delinquents were also more external than non-deliqnuents o in respect of peers (positive and negative), sex partner (positive and negative) teacher (positive), family doctor (negative), police (positive), institution (positive), domestic animal (negative) and physical environment (negative); but delinquents seemed significantly more internal than non-delinquents (albeit at only the .05 level) in respect of luck as a source of positive reinforcement (a reflection, perhaps, of their belief that good luck is an important agent in people's lives!).

In terms of the above general look at Table IV.II, it would appear that there were enough significant differences to confirm the earlier and main finding (Table IV.2) that delinquency played a major role in the variations in the study. This, however, does not provide sufficient explanation of many of the features of the results in Table IV.II: for instance, it does not indicate what the implications are in respect of the effectiveness of the items of the C.A.S.C. Hence the need to go into specifics in order to examine more systematically, the implications for pairs of items (positive and negative) discriminating significantly or non-significantly between delinquents and non-delinquents, as well as the implications for one of a pair discriminating significantly and the other not. Possible implications in such instances could be that one or the other item or both were unsatisfactory, or that the data reflect real differences or a real lack of differences. Nor can the intervention of other factors like subject or group characterics be ruled out.

FATHER

Thus, beginning with items 21 and 14 (Table IV.II) i.e. with the pair referring to the source "father", one notices that delinquents appeared to have been more external than non-delinquents in regard to negative reinforcement emanating from that source. If either scale item was unsatisfactory resulting in a spurious difference, its biserial correlation index would seem to be the most useful source of information about its discriminant power, at least within the context of this study. Reference to Table III.14 above indicates that the two items had biserials of .30 ($p < .05$) and .33 ($p < .02$), respectively. Compared with the sizes of r bis for items of other I-E Scales (eg. Rotter, 1966) the two biserials here seem to indicate that the items concerned are relatively satisfactory. If this explanation

is acceptable, then one may turn for an explanation of the difference found, to the alternative inference that the two subject categories - delinquents and non-delinquents - were indeed different from one another, albeit at the .05 level, in their reactions to negative reinforcement coming from "father."

MOTHER

There is an exact parallel between the items referring to "father" and those - items 6 and 12 - referring to "mother.". In this instance, too, delinquents were significantly more external in respect of the negative item (12, cf. TABLE IV.II) than non-delinquents. The corresponding biserials in TABLE III.14. would seem to give grounds for concluding that a real difference at the .01 level existed between delinquents and non-delinquents in regard to "mother" (negative). It also seems possible to establish an association easily between delinquent tendencies in young people and negative reinforcements from parents who tend to be the most involved and frequently the primary agents of socialization. Thus locus of control items like the four just examined could be useful clinical tools in examination parent-child attributional orientations. It has to be mentioned, too, that the non-significant differences between delinquents and non-delinquents in regard to positive reinforcements coming from both parental sources appear to have been genuine as well.

SIBLINGS

With regard to the third source of reinforcement control, namely, siblings (cf. items 8 and 1), TABLE IV.II shows that there were no significant differences between delinquents and non-delinquents in respect of both the relevant positive and negative items. Reference to TABLE III.14 shows that the biserials for

both items were compatible in size (.22) and probable significance, in the sense that, though not significant, they were acceptable for inclusion in the scale in terms of the rationale used in selecting items for inclusion in the final scale. That rationale may have been mistaken, although there are other children's scales with lower and non-significant r bis (eg. Nowicki and Strickland, 1973; Nowicki and Duke, 1974). While not totally ruling out other possible interpretations, one could say, therefore, that the non-significance of the differences indicate the poor discriminant powers of the two items and thus that they need improving. It could also indicate that the items were relatively effective but that the two categories of subjects were not really different in their reactions to reinforcements from this particular source. For, in comparison with parents, for instance, siblings would seem less likely to be so inevitable and so fundamental a source of reinforcement and/or conflict evocation as to readily stimulate delinquent reactions. However, reference to the data in Appendices C14 to C16 shows that both groups were highly internal with respect to both items, and since the C.A.S.C. has already been declared to be somewhat biased in the internal direction, a future C.A.S.C. will need to avoid ambiguity by refining this pair of items further.

SELF

Delinquents and non-delinquents were also non-significantly different from one another in respect of both the positive (item 28) and negative (item 18) aspects of the fourth source of reinforcement control, namely, "self". But whereas both groups were highly external in respect of self (Positive), both were highly internal in respect of self (negative). The biserial for item 28 (self, positive), at .21 was within the range for selection (cf. TABLE III.14), and that for item 18

(self-negative) at .23, $p<.05$, (cf. TABLE III.6) was also acceptable. It therefore seems a little baffling to find both delinquent and non-delinquent youths associating positive aspects of the self with external reinforcement control and negative aspects of the self with internal reinforcement control. This may, however, reflect a characteristic way of handling the self by young people - exposing it to (even chance) rewarding external influences but becoming more discerning where control may hurt pride. This explanation is, of course, speculative. Replication and refinements would be needed to allow more certain inferences to be drawn.

PEERS

Ths positive and negative aspects of the fifth source of reinforcement control, namely, peers, seemed to have been the most effective in discriminating between delinquents and non-delinquents. In respect of both items, (19 and 10) delinquents were highly significantly more external than non-delinquents ($p<.01$, and $p<.001$, respectively). It is to be noted though that while item 19 had the highest overall r bis of .47 ($p<.001$), item 10 had a non-significant r bis of .20 and .30 for males and females, respectively, with an overall r bis of -.09. The reason for the discriminative strength of the two items is not readily apparent.

SEX PARTNER

In spite of having non-significant r bis, the two items 11 and 26 referring to sex partner, the sixth source of reinforcement control, also appear effective and satisfactory, again showing delinquents to have been significantly more external than non-delinquents ($p<.02$ and $p<.05$, respectively).

TEACHER

With regard to "teacher", the seventh source, only the positive aspect (item 5) discriminated significantly ($p < .01$) between delinquents and non-delinquents, showing the former category of subjects to have been more external than the latter. This happened in spite the fact that item 5 had a non-significant but selectable r bis of .24. On the other hand, no significant difference was found between delinquents and non-delinquents in regard to the negative item (29) which had a significant r bis of .30 ($p < .01$ cf. TABLE III.6). The results affecting the source "teacher" would thus seem to indicate that both the significant and non-significant differences found between the two groups were real. It is noteworthy that it is in regard to negative reinforcement from "teacher" that both groups of young people showed no significant difference between them.

FAMILY DOCTOR

Regarding items 24 and 27 which refer to the eigth source, family doctor, TABLE IV.II shows that delinquents and non-delinquents were not significantly different from one another in respect of the positive aspect (item 24) but significantly different ($p < .01$) in respect of the negative aspect, showing delinquents to have been more external than non-delinquents. TABLE III.14 shows that the r bis of .20 for item 24 was within the selection range and that the r bis of .34 ($p < .02$) for item 27 was even better. This seems to have been a clear case of the item with a non-significant r bis discriminating less effectively, although the relevant raw data in Appendices C14 to C16 indicate that the responses of both groups to the two items were strongly biased in the internal direction - the oft repeated defect of the C.A.S.C. It would appear then that the two kinds of differences

found in regard to "family doctor" were real, but that the directional bias in the items need correction.

POP/T.V. STAR

Judging by the biserials of .26 ($p<.05$) for item 9 (cf. TABLE III.5 - males column) and of .30 ($p<.05$) for item 25 (cf. TABLE III.14), the non-significance of the differences between the groups in regard to Pop/T.V. Star, the ninth source, seem real. (The raw data in Apendices C14 to C16 for item 9 show a more unbiased distribution, while those for item 25 which show both groups to have been external with regard to the measure of success for a pop star, would seem to indicate that young people believe that success in the pop world is attainable by luck). It would appear to be a hard task making delinquents and non-delinquents differ in matters affecting the T.V./Pop culture, in view of the apparently pervasive and powerful nature of that culture as a symbol of glamour and freedom. Nevertheless if the items could be refined to discriminate more effectively, a useful addition would be made to the tools for assessing young people.

POLICE

Table IV.II shows delinquents to have been more highly external in regard to the positive item (13) of the tenth source, police, than non-delinquents, while there was no significant difference between the two groups in regard to police (negative) - item 4. TABLE III.6 shows the r bis for item 13 to be .36 ($p<.001$) and TABLE III.14 shows the r bis for item 4 to be at the non-significant selection cut-off point of .20. This seems another clear case of a weak member of a pair needing strengthening. It is worth mentioning, however, that both groups of young people scored highly externally in respect of item 4 - police negative. It is therefore possible to argue that negative reinforcement from the police evokes a more or

less uniform response (external) from most youths.

INSTITUTIONS - SCHOOL/PRISON

In respect of institutions, the eleventh source, delinquents scored significantly more externally in regard to the positive item (cf. TABLE IV.II). The pattern of results in the conceptually related subject of police in repeated here, where both groups appeared not to differ significantly in regard to the negative item which involved "prison." Since the two (items 23 and 22) have a r bis of .43 ($p<.01$) and .22, respectively, the differences may be regarded as real. That the differences in regard to the negative item was not significant, may be attributed as much to the ineffectiveness of the item as to the attitude of young people (and maybe of adults, too!) to prison as a punitive institution. This is another instance in which replication would be informative.

DOMESTIC ANIMAL

TABLE IV.II shows that in regard to "domestic animal", the twelfth source, no significant difference was recorded for the positive item (20), while a highly significant difference showing delinquents to be more external than non-delinquents, was recorded for the negative item (17). Item 20 had an r bis of .21 (cf. TABLE III.14) while item 17 had an r bis of .22 (cf. TABLE III.13). Both items need refining for the reason that neither of their r bis reached significance; moreover, although item 17 produced a significant distinction between delinquents and non-delinquents, the responses of both groups to it were rather internally biased.

PHYSICAL ENVIRONMENT

With regard to "physical environment", the thirteenth source, both groups were found to be non-significantly different with respect to the positive item (2) but significantly different with respect to the negative item (16), with delinquents again being more external than non-delinquents. TABLE IV.14 shows the r bis for the two items to be .20 and -.30 (p .05), respectively. It is clear here that it was the item with the significant r bis that discriminated significantly between the two categories of subjects, the opposite being the case for the item with the non-significant r bis. Thus the effectiveness of item 2 needs looking into. On the other hand, it is just possible that in this case, as in some others, seen above, the fact that significant differences tended to occur more often with regard to negative items than to positive ones, could in itself indicate an important qualitative difference in the perception of reinforcement control by the two groups, a difference quite unrelated to the weakness of an item.

INANIMATE OBJECT

TABLE IV.II shows that no significant difference was recorded in erespect of either item (7 or 3) of this fourteenth source. Although their r bis of .30 ($p < .05$) and -.20 (cf. TABLES III.14 and III.13, respectively) were acceptable, the raw data in Appendices C14 to C16 show their main defects. Responses to item 7 were strongly biased toward externality and responses to item 3 were biased toward internality. The biases need correcting.

LUCK

Finally, TABLE IV.II shows that unlike in other cases, delinquents were significantly more internal than non-delinquents in respect of item 30 - luck positive ($p<.05$). It has to be added, though, that both groups of subjects scored externally in respect of item 30 as well as in respect of item 15, the negative item of this source. At -.23 and .31 ($p<.05$) respectively, the r bis for both items seem reasonable especially when it is considered that it was the item (30) with the non-significant r bis that discriminated more effectively.

Having now come to the end of the detailed scanning of what is the most important aspect of the results relating to responses to individual items of the C.A.S.C., one finds, through the pooling of information from three sources - the biserials in Chapter III, the Chi square indices in TABLE IV.II and the raw data in Appendices C14 to C16, that is has become clearer how significant and non-significant differences came about in respect of each item. Some of the differences between delinquents and non-delinquents were real while others seemed to have been at least part functions of the weaknesses of certain items. It was also noticeable that, although not invariably so, there still seemed to have been a tendency for items with non-significant but selectable r bis to have generated non-significant differences between the subject categories. One must hasten to add that, to be considered effective, an item need not generate significant differences between every group of subjects compared with other groups. Nevertheless since the C.A.S.C. seems to hold some real promise as an effective instrument (as least in terms of its rationale) for studying delinquency proneness, further refinements of it should take serious account of items with non-significant r bis.

(B) Institutional/Intra-Delinquent Group Differences.

In the light of the revelation of item weaknesses through the scanning of results derived from comparing the responses of delinquents and non-delinquents to individual items as above, some insight can be gained into the differences arising out of subsequent comparisons of the same structure. For, since the same items are involved in all the comparisons, there does not appear to be any need to continue commenting on the effectiveness or otherwise of each item in the context of every comparison. For instance, if, through the ineffectiveness of a number of items of the C.A.S.C. non-significant differences occurred in several cases between delinquents and non-delinquents, still more non-significant differences could be expected in intra-delinquent group comparisons in as much as such groups or subgroups could be regarded as more homogeneous (in being delinquents). If this homogeneity argument is valid, non-significant differences could also be expected to occur in intra-delinquent group comparisons on self-esteem which involved a better researched and standardized scale than the C.A.S.C. Following this line of reasoning, where even strong trends toward significant intra-delinquent group differences are discernible, one could expect useful socio-personality and clinical implications to follow;

In an earlier post hoc analysis (TABLE IV.5) paired comparisons of institutions had shown significant differences in locus of control occurring between remand home subjects and community home subjects and borstal boys. No other intra-delinquent group comparison yield significant differences. In general, the results were taken as reflecting the poor performances of remand home subjects and borstal girls, and enhancing somewhat the relatively strong performance of community home subjects. In the light of the results of scanning responses to individual items in order to determine the effectiveness of

items, and considering the above homogeneity argument, the fewness of significant differences in the post hoc comparisons in TABLE IV.5 seem to accord with expectations. At the same time, the stronger tendencies toward internality of subgroups like community home subjects and borstal boys, suggest, among others, socio-personality and/or institutional explanations.

(i) Remand Home Subjects Vs. Community Home Subjects

Turning now to intra-delinquent group comparisons of responses to individual items, and beginning with a comparison of remand home and community home subjects, one finds in TABLE IV.12 support for the findings in the post hoc comparison in TABLE IV.5 as well as for the reasoning behind that finding.

TABLE IV.12: Remand Home Subjects VS. Community Home Subjects.

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	o.08(ns)	14	0.16(ns)
2. Mother	6	0.08(ns)	12	0.01(ns)
3. Siblings	8	0.02(ns)	1	0.04(ns)
4. Self	28	0.04(ns)	18	2.21(ns)
5. Peers	19	0.0003(ns)	10	1.11(ns)
6. Sex Partner	11	1.34(ns)	26	7.96($p<.01$)
7. Teacher	5	1.45(ns)	29	3.33(ns)
8. Family Doctor	24	0.0003(ns)	27	0.85(ns)
9. Pop/T.V. Star	9	1.62(ns)	25	0.0002(ns)
10. Police	13	0.17(ns)	4	0.70(ns)
11. Institutions (School/Prison)	23	0.08(ns)	22	0.15(ns)
12. Domestic Animal	20	5.94($p<.02$)	17	0.73(ns)
13. Physical Environment	2	0.85(ns)	16	0.95(ns)
14. Inanimate Object	7	2.13(ns)	3	3.05(ns)
15. Luck	30	0.05(ns)	15	0.03(ns)

Thus TABLE IV.12 shows that to the degree that remand and community home subjects were homogeneous, the vast majority of the results of the comparison were non-significant. The stronger tendency of the community home subjects towards internality which was reflected in a general way in the mean scores in TABLE IV.5, is indicated more specifically in two sources of control, sex partner (negative) and domestic animal (negative). It will be remembered that non-delinquents were also found in TABLE IV.11 to be significantly more internal than delinquents in respect of the same two items involved here. One could justifiably say that if all the items of the C.A.S.C. had had greater discriminantability, more significant differences might have emerged, though such results would still have remained a function of the differential degrees of delinquency in both sub-groups. It would also have to be measured against the fact that not all the effective items of the C.A.S.C. produced significant differences in this instance. Moreover, reference to TABLE IV.6 shows that, as expected, the post hoc comparison of remand and community home subjects on self-esteem yielded a non-significant difference, thus providing a strong support for the homogeneity argument. The case for strngthening the weak items of the C.A.S.C. is not in any way gainsaid in this context.

(ii) Remand Home Subjects Vs Borstal Boys

TABLE IV.13 shows results of the comparison of remand home subjects and borstal boys on responses to individual items. The post hoc comparison in

TABLE IV.13: Remand Home Subjects Vs. Borstal Boys

Sources	Positive Items	Chi Square	Negative Items	Chi Square
Father	21	1.69(ns)	14	0.68(ns)
Mother	6	3.24(ns)	12	0.08(ns)
Siblings	8	0.003(ns)	1	0.08(ns)
Self	28	1.20(ns)	18	0

BLE IV.13: Continued

Sources	Positive Items	Chi Square	Negative Items	Chi Square
Peers	19	9.48($p<.01$)	10	8.71($p<.01$)
Sex Partner	11	5.41($p<.02$)	26	1.20(ns)
Teacher	5	1.00(ns)	29	5.20($p<.05$)
Family Doctor	24	0.10(ns)	27	3.76(ns)
Pop/T.V. Star	9	1.46(ns)	25	0.14(ns)
Police	13	0.25(ns)	4	0.05(ns)
Institutions	23	0.42(ns)	22	0.15(ns)
Domestic Animal	20	1.69(ns)	17	0.07(ns)
Physical Environment	2	5.84($p<.02$)	16	0.64(ns)
Inanimate Object	7	0.20(ns)	3	1.55(ns)
Luck	30	1.58(ns)	15	0.01(ns)

BLE IV.5 had shown borstal boys to be highly significantly more internal than remand home subjects. The possibility that the age gap between the two subgroups may have contributed to that result was strongly considered. TABLE IV.13 now shows that the difference centred mainly around four sources of reinforcement control, namely, peers (positive and negative), sex partner (positive), teacher (negative) and physical environment (positive). It can be said that as in TABLE IV.12 above, the relative homogeneity of the subgroups together with the ineffectiveness of the items, appear to have contributed to the non-significant differences found in themajority of the cases in TABLE IV.13. At the same time, it can also be said that the relative effectiveness of the four items above, together with the age factor contributed to the significant differences found. The corresponding comparison of the two subgroups on self-esteem (TABLE IV.6) again gives support to the homogeneity argument here.

(iii) Remand Home Subjects Vs. Borstal Girls

The contrast between these two subgroups in responses to individual items is shown in TABLE IV.14. Two of the items found to be recurrently powerful in discriminant ability in previous comparisons, viz, items referring to peers (negative) and sex partner (negative) have re-emerged in this comparison; they show borstal girls to have been more internal than remand home subjects. It has

TABLE IV.14: Remand Home Subjects Vs. Borstal Girls

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	2.05(ns)	14	0.21(ns)
2. Mother	6	1.42(ns)	12	0.01(ns)
3. Siblings	8	0.02(ns)	1	0.01(ns)
4. Self	28	0.04(ns)	18	0.90(ns)
5. Peers	19	3.60(ns)	10	4.54($p<.05$)
6. Sex Partner	11	3.73(ns)	26	20.52($p<.001$)
7. Teacher	5	0.09(ns)	29	3.60(ns)
8. Family Doctor	24	0.95(ns)	27	1.02(ns)
9. Pop/T.V. Star	9	2.08(ns)	25	0.26(ns)
10. Police	13	1.64(ns)	4	1.03(ns)
11. Institutions	23	1.68(ns)	22	0.03(ns)
12. Domestic Animal	20	0.12(ns)	17	0.02(ns)
13. Physical	2	0.30(ns)	16	1.51(ns)
14. Inanimate Object	7	0.03(ns)	3	1.57(ns)
15. Luck	30	0.88(ns)	15	0.52(ns)

already been noted that these two subgroups generally performed less well than the other two subgroups of delinquents. Thus, in spite of the age gap between the much older borstal girls and remand home subjects, their delinquent characteristics together with the ineffectiveness of some items, seemed to have depressed

the differences more than in previous comparisons. Again, the corresponding comparison of the two subgroups on self-esteem (TABLE IV.6) indicates no significant difference.

(iv) Community Home Subjects Vs. Borstal Boys

Of the four subgroups of delinquents, it has been noted that the two concerned here performed better. But as stated earlier, and as indicated by the mean locus of control and self-esteem scores in TABLES IV.5 and IV.6, respectively, the performances of the community home subjects relative to that of the much older borstal subjects, is distinctive even where differences were non-significant. Thus, the explanation of the results in TABLE IV.5 would seem to call for something beyond the explanations of differences in the other intra-delinquent group comparisons. Those other explanations do apply here, of course. As can be seen in TABLE IV.15, the

TABLE IV.15: Community Home Subjects Vs Borstal Boys

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	0.33(ns)	14	0.0001(ns)
2. Mother	6	3.00(ns)	12	0.04(ns)
3. Siblings	8	0.001(ns)	1	0.05(ns)
4. Self	28	0.22(ns)	18	3.09(ns)
5. Peers	19	7.24(ns)	10	1.95(ns)
6. Sex Partner	11	0.38(ns)	26	1.50(ns)
7. Teacher	5	0.01(ns)	29	0.17(ns)
8. Family Doctor	24	0.36(ns)	27	0.04(ns)
9. Pop/T.V. Star	9	0.001(ns)	25	0.0001(ns)
10. Police	13	0.06(ns)	4	2.49(ns)
11. Institutions	23	0.32(ns)	22	0.03(ns)
12. Domestic Animal	20	1.49(ns)	17	0.87(ns)
13. Physical Environment	2	1.10(ns)	16	4.45($p<.05$)
14. Inanimate Object	7	0.89(ns)	3	0.15(ns)
15. Luck	30	0.42(ns)	15	0.002(ns)

older borstal boys were significantly more internal than community home subjects in respect of only two sources - peers (positive) and physical environment (negative). The better researched self-esteem scale extracted no significant difference either (TABLE IV.6), all of which would seem to point to certain socio-personality characterics more peculiar to the circumstances of the community home subjects than of the other subgroups of delinquents.

(v) Community Home Subjects VS. Borstal Girls

Given the parts played by delinquency and the ineffectiveness of items, the results in TABLE IV.16 seem to enhance a little more the stronger performance of the community home subjects as against that of the much older borstal girls. The one recorded.

TABLE IV.16: Community Home Subjects VS Borstal Girls

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	0.51(ns)	14	0.06(ns)
2. Mother	6	1.30(ns)	12	0.001(ns)
3. Siblings	8	0.11(ns)	1	0.01(ns)
4. Self	28	0.48(ns)	18	0.22(ns)
5. Peers	19	2.19(ns)	10	0.34(ns)
6. Sex Partner	11	0.06(ns)	26	1.38(ns)
7. Teacher	5	1.64(ns)	29	0.02(ns)
8. Family Doctor	24	1.54(ns)	27	0.08(ns)
9. Pop/T.V. Star	9	0.06(ns)	25	0.66(ns)
10. Police	13	0.23(ns)	4	0.06(ns)
11. Institutions	23	1.46(ns)	22	0.14(ns)
12. Domestic Animals	20	10.22($p<.01$)	17	0.65(ns)
13. Physical Environment	2	0.07(ns)	16	0.03(ns)
14. Inanimate Object	7	3.48(ns)	3	0.18(ns)
15. Luck	30	1.99(ns)	15	0.32(ns)

significant difference in TABLE IV.16 shows community home

subjects to have been more internal in respect of "domestic Animal" (positive) than borstal girls. Even in respect of "sex Partner" where the girls might have been expected to show greater maturity, no significant differences were recorded. The locus of control and self-esteem mean scores in TABLES IV.5 and IV.6 support this interpretation of the results of this comparison.

(vi) Borstal Boys VS Borstal Girls

These two subgroups were more comparable in age and institutional categorization. Thus, unless the factor of sex intervened, the results in TABLE IV.17 should strongly support the homogeneity argument even more here, not forgetting the probable depressing effect of item ineffectiveness. TABLE IV.17 shows that borstal.

TABLE IV.17: BORSTAL Boys VS. Borstal Girls.

Source	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	0.01(ns)	14	0.02(ns)
2. Mother	6	0.16(ns)	12	0.02(ns)
3. Siblings	8	0.02(ns)	1	0.01(ns)
4. Self	28	3.06(ns)	18	1.53(ns)
5. Peers	19	0.97(ns)	10	0.40(ns)
6. Sex Partner	11	0.01(ns)	26	0.09(ns)
7. Teacher	5	1.23(ns)	29	0.001(ns)
8. Family Doctor	24	0.21(ns)	27	0.21(ns)
9. Pop/T.V. Star	9	0.002(ns)	25	1.70(ns)
10. Police	13	0.42(ns)	4	3.40(ns)
11. Institutions	23	0.20(ns)	22	0.15(ns)
12. Domestic Animal	20	4.47($p<.05$)	17	0.02(ns)
13. Physical Environment	2	3.32(ns)	16	6.33($p<.02$)
14. Inanimate Object	7	0.61(ns)	3	0.21(ns)
15. Luck	30	7.21($p<.01$)	15	0.22(ns)

boys were significantly more internal than borstal girls in

respect of three items - domestic animal (positive) physical environment (negative) and luck (positive). To the extent that the factor of sex played a part in those significant differences, it could be speculated that girls in certain circumstances might be more likely than boys to "take it out" on objects like domestic animals, be a lot more sensitive to inadequate environmental facilities, and entrust themselves more to fate/ luck - all (probably) because conventionally they are made to feel more helpless!!

The above speculation apart, the bulk of the data in TABLE IV.17 would seem to be in support of the homogeneity argument, reinforced by the result of the corresponding self-esteem comparison in TABLE IV.6

In sum then, the study of intra-delinquent group responses to individual items of the C.A.S.C., would seem to show that, although the depressant function of the not-so-effective items revealed by the earlier scanning may have contributed to the non-significant differences found, the additional factor of shared delinquent characteristics in the subgroups, may also have played a strong part. Strong support has been found for the latter inference from the fact that corresponding intra-delinquent group comparisons on self-esteem all yielded non-significant differences.

(C) Sex Differences

Having examined each item of the C.A.S.C. for effectiveness, one may now attempt to explain the comparison of males and females in terms of their responses to those items by looking at a number of aspects of the data in TABLE IV.18. The

TABLE IV.18: Sex Differences

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	1.11(ns)	14	0.57(ns)
2. Mother	6	1.73(ns)	12	0.02(ns)
3. Siblings	8	1.84(ns)	1	0.01(ns)
4. Self	28	2.19(ns)	18	0.61(ns)
5. Peers	19	0.42(ns)	10	0.74(ns)
6. Sex Partner	11	6.76($p<.01$)	26	11.99($p<.001$)
7. Teacher	5	0.0003(ns)	29	0.02(ns)
8. Family Doctor	24	2.09(ns)	27	0.01(ns)
9. Pop/T.V. Star	9	1.98(ns)	25	1.09(ns)
10. Police	13	13.73($P<.001$)	4	15.42($p<.001$)
11. Institutions	23	3.21(ns)	22	0.87(ns)
12. Domestic Animal	20	0.77(ns)	17	0.13(ns)
13. Physical Environment	2	1.24(ns)	16	0.29(ns)
14. Inanimate Object	7	2.72(ns)	3	1.45(ns)
15. Luck	30	13.25($p<.001$)	15	0.25(ns)

first aspect inevitably concerns the relative ineffectiveness of several of the C.A.S.C. items which must be seen as helping in no small way to blur any sharp differences there might have been between males and females, hence the many non-significant differences apparent in TABLE IV.18. When intra-delinquent group differences were examined above, it was noted that a high degree of homogeneity of the subgroups or the commonality of delinquent characteristics in the subjects involved, may, in conjunction with items of low discriminant power, have accentuated the lack of significant differences observed. The contrary seems to have applied in this instance. Thus, while males and females were non-significantly different in respect of most of the items of the C.A.S.C., the support given to such results e.g. in TABLE IV.6 did not materialize here. Instead,

TABLE IV.8 shows that males had significantly higher self-esteem scores than females. While this points up more clearly the weakness of the C.A.S.C., it also indicates that whatever significant differences appear in TABLE IV.18 are due more to sex differences than to other factors, e.g. homogeneity.

A second aspect of the data in TABLE IV.18 that one may consider and which somehow relates to the first, is that some of the non-significant differences may actually indicate a genuine lack of differences between the sexes in attributing causes to c certain sources. This is bolstered by the fact that, as the scanning of items in TABLE IV.11 above showed, not all the items with non-significant indices in TABLE IV.18 were ineffective.

A third aspect of the data in TABLE IV.18 relates to the instances in which there were actual significant differences between males and females, notably, in respect of sex partner (positive and negative) and police (positive and negative), both showing females to have been significantly more internal than males. In addition, TABLE IV.7 above shows that the trend of the locus of control mean scores was in all instances in favour of females. There could well be special reasons why, in general, females perceived "sex partner" and "police" significantly more internally. These will be discussed later. It must be noted, however, that males were significantly more internal than females in respect of luck (positive). One may also mention in connection with these results, the general problem of interpreting sex differences in locus of control. The trend in this study seems contrary to that in previous findings (cf. Chapter II, Section G). Whether or not the contrary trends in findings result from the nature of locus of control scales used is an issue that cannot be tackled with the data of this study; but it constitutes a ligitimate case for a still more analytic further research.

(D) Social Class Differences

TABLE IV.19: Social Class Differences

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	0.27(ns)	14	1.93(ns)
2. Mother	6	0.01(ns)	12	1.58(ns)
3. Siblings	8	0.05(ns)	1	1.55(ns)
4. Self	28	0.26(ns)	18	0.02(ns)
5. Peers	19	0.22(ns)	10	1.96(ns)
6. Sex Partner	11	0.68(ns)	26	0.16(ns)
7. Teacher	5	0.02(ns)	29	0.48(ns)
8. Family Doctor	24	0.01(ns)	27	0.06(ns)
9. Pop/T.V. Star	9	0.02(ns)	25	0.21(ns)
10. Police	13	1.45(ns)	4	3.38(ns)
11. Institutions	23	0.73(ns)	22	3.24(ns)
12. Domestic Animal	20	0.29(ns)	17	0.05(ns)
13. Physical Environment	2	0.001(ns)	16	2.77(ns)
14. Inanimate Object	7	0.01(ns)	3	0.94(ns)
15. Luck	30	1.60(ns)	15	0.001(ns)

The partitioning of the categories main effect in the analysis of variance (TABLE IV.2) had shown that there were no social class differences in locus of control in the context of this study - a situation repeated in respect of self-esteem in TABLE IV.4. TABLE IV.19 provides social class data in relation to responses to individual items of the C.A.S.C. In the partitioning operations in the two analysis of variance tables (IV.2 and IV.4), subjects in social classes 1 and 2 (C_1) and 3 and 4 (C_2) were compared with each other, and then, together both groups were compared with delinquents (C_3). Since, in this analysis of responses to individual items, the comparison $C_1 + C_2$ VS. C_3 has been taken care of in TABLE IV.11, TABLE IV.19

shows the results of the comparison C_1 VS C_2, thus keeping to a minimum any confounding effect that delinquency might introduce into the effect of social class. In this latter comparison, it would appear that, in spite of the relative ineffectiveness of several items of the C.A.S.C., the original finding (TABLE IV.2) has been clearly repeated. Thus TABLE IV.19 shows that there was not even an isolated instance or source or reinforcement control in respect of which a significant difference emerged. And, as mentioned earlier, the result (TABLE IV.4) in respect of self-esteem gives very strong support to this finding. Thus, at the same time as seeking ways of increasing the effectiveness of the C.A.S.C. items, one is bound to seek an explanation as to why the social class results here are contrary to previous locus of control findings on the subject (CF. Chapter II, Section F). This will be discussed later.

(E) Age Differences

The age main effect in the analysis of variance (TABLE IV.2) has shown no more than a trend towards significance, and that could easily have occurred by chance. In view of reports of the age - sensitivity of the locus of control concept (Bialer, 1961, Cromdall et al., 1965; Nowicki and Strickland, 1973; etc.) the reason for the non-significance of the age effect in TABLE IV.2 must be inherent in the C.A.S.C. itself, and this is where the analysis of responses to individual items and the scanning of the results for item effectiveness come in useful. First of all, the mean locus of control scores of subjects (cf. Appendix C.13) show that both younger and older subjects had rather high internality scores. That gave a first indication of the weakness of the C.A.S.C. The scrutinizing of each item in Section X(a) of this Chapter has enabled one to know the items that will need special attention in a future C.A.S.C.

TABLE IV.20: Age Differences

Sources	Positive Items	Chi Square	Negative Items	Chi Square
1. Father	21	0.01(ns)	14	0.30(ns)
2. Mother	6	0.09(ns)	12	0.15(ns)
3. Siblings	8	4.19($p<.05$)	1	0.21(ns)
4. Self	28	0.45(ns)	18	0.54(ns)
5. Peers	19	13.85($p<.001$)	10	0.90(ns)
6. Sex Partner	11	8.78($p<.01$)	26	9.03($p<.01$)
7. Teacher	5	1.53(ns)	29	3.26(ns)
8. Family Doctor	24	0.03(ns)	27	2.28(ns)
9. Pop/T.V. Star	9	0.18(ns)	25	0.55(ns)
10. Police	13	0.15(ns)	4	2.35(ns)
11. Institutions	23	4.44($p<.05$)	22	0.66(ns)
12. Domestic Animal	20	1.36(ns)	17	0.25(ns)
13. Physical Environment	2	0.04(ns)	16	5.75($p<.02$)
14. Inanimate Object	7	0.82(ns)	3	0.03(ns)
15. Luck	30	0.66(ns)	15	0.23(ns)

There seems little doubt that if the C.A.S.C. items had been more effective, the age main effect would have confirmed previous results. For, in spite the fact that the age main effect only approached significance, the analysis by items in TABLE IV.20 has shown that older subjects were actually significantly more internal than younger ones in respect of items that have hitherto consistently emerged as effective, namely, peers (positive), sex partner (positive and negative), institution (positive) and physical environment (negative). There is no doubt, though, that there must have been effective items (eg. re father, mother, police) that genuinely produced non-significant differences between younger and older subjects. Nevertheless, one is convinced of the age-sensitivity of the locus of control concept, of the fact that several C.A.S.C.

items need refining, and of the fact that an effective C.A.S.C. would be a useful diagnostic and research tool.

(xi) Preferences for Positive/Negative Reinforcements

To bring to an end presentation of results in respect of differences in locus of control, we move on to a test of the fourth hypothesis of the study, namely, that in respect of the fifteen sources of reinforcement control used in the construction of the C.A.S.C., delinquents, in contrast to controls, would have significantly higher preferences for positive responses to reinforcement control than for negative ones, while the preferences of controls would be weighted on the side of choosing more internal negative reinforcements as a reflection of the fact that they are more able to face unpalatable event outcomes. A test of this hypothesis ought to be prefaced by a restatement of the fact that internal scores were used in all computations involving the C.A.S.C. Thus the internal score of each subject was split into its positive and negative components. The balance between a subjects positive internal score and his or her negative internal score, contributed toward his or her group's leaning toward positive or negative choices of reinforcement.

The procedure for testing the hypothesis was first to determine the difference scores between positive and negative preferences. A constant (+7 in this instance) equal to the largest difference scores for both delinquents and non-delinquents was then used to get rid of sign differences. The unrelated t-test was then employed on the resulting data. TABLE IV.21 shows the results of the operation. The

TABLE IV.21: Differences in Reinforcement Preferences between Delinquents and Controls

Subjects	Mean Differences	t	df	p
Delinquents	6.551			
Non-Delinquents	5.702	3.333	333	.0005

test was one-tailed. It is evident from TABLE IV.21 that delinquents were highly significantly more inclined toward the choice of positive reinforcements than non-delinquents. The hypothesis was thus upheld.

SECTION B: Results Concerning Relationships

The relationships between locus of control and self-esteem for the various subgroups of delinquents and non-delinquents are the subject of examination under this final section of the results. In regard to these relationships, the fifth and last hypothesis of this study stated that self-esteem would correlate with locus of control the higher internality scores, reflecting similarities in the developmental antecedents of the two constructs. TABLE IV.22 shows results concerning this hypothesis beginning with data on different groupings of delinquents. and dending with data on different groupings of controls. All tests of significance concerning these relationships were two-tailed.

TABLE IV.22: Correlations between Locus of Control and Self-Esteem

Subject Groupings	r	df	p
All Delinquents	0.22	125	.05
Male Delinquents	0.20	88	ns
Female Delinquents	-0.03	35	ns
Remand Home Delinquents	0.35	25	ns
Community Home Delinquents	0.33	22	ns
Borstal Boys	0.06	37	ns
All Controls	0.24	206	.01
Male Controls	0.34	119	.001
Female Controls	0.19	85	ns
Males in Classes I & II	0.44	48	.01
Males in Classes III & IV	0.25	69	.05
Females in Classes I & II	0.18	57	ns
Females in Classes III & IV	0.23	26	ns

It is apparent from TABLE IV.22 that, in general, locus of control and self-esteem correlated poorly for delinquents. It was only when all delinquents were considered that a significant correlation was obtained between the two scales. Looking more closely at the data for delinquents, one observes that high but non-significant correlations were recorded for remand home delinquents, community home delinquents and male delinquents taken together. A very low and negative correlation was recorded for delinquent (borstal) girls; and borstal boys had the second lowest, if positive, correlation - the lowest for delinquent boys. Thus, it is plain that, as far as delinquents, especially female delinquents, were concerned, the hypothesis that self-esteem scores would correlate progressively more highly with locus of control the higher internality scores, was not supported.

Turning to controls, one notices that the only non-significant correlations recorded for controls were in respect of female controls. Remembering that the lowest correlation for delinquents was recorded for female delinquents, one is inclined to say that, in general, locus of control and self-esteem correlate poorly for females, and thus that the hypothesis is not supported in respect of females, especially since the highest internal locus of control scores were obtained from female controls (cf. Appendix C13). It was in respect of male controls, especially males in social Classes I and II, that the hypothesis found its strongest support.

SUMMARY

In sum, then, the results of this study have shown in the main that delinquents were more external in control orientation than non-delinquents, female delinquents more so than male delinquents. This pattern was repeated in respect of self-esteem. The detailed study of items for effectiveness showed that some items

were weaker than others, and that they need refining in a future C.A.S.C. It was also found that the weaker items often acted as depressants in respect of significant differences. Intra-delinquents or institutional differences appeared to increase in importance beyond what was anticipated in the study of delinquents. Sex differences were more significant in respect of self-esteem than in respect of locus of control. But no social class differences emerged in respect of either construct. Delinquents in contrast to controls were found to have been more highly significantly inclined to prefer positive to negative reinforcements. Finally, locus of control and self-esteem correlated more highly for controls than for delinquents, and more highly for males than for females.

CHAPTER V. DISCUSSION AND CONCLUSION

In a study such as this, in which a fledgling instrument (the C.A.S.C.) was so central to the ideas tested, caution in drawing inferences must be the watchword. Although Rotter's (1966) locus of control construct has been extensively utilized in the study, several other attribution theories and constructs have been reviewed, and it has been strongly argued that the concept of attribution is the common denominator of these theories, including Rotter's. The construction of the C.A.S.C. would, therefore, not have escaped the influence of that argument. Accordingly, the interpretation of the results of this study should be seen in a wider context of attribution, especially attribution by young people still in the throes of developmental changes. The choice of experimental subjects (delinquents) as well as the clinical emphasis in the organisation of the study indicate that an application of attribution theory/theories to clinical situations was attempted, and that the rationale behind the C.A.S.C. was the main suggestive step in that direction. The following discussion is presented under subheadings related to subheadings in Chapter IV for results, and it integrates results of the main analysis with those of the more detailed responses to individual items, including consideration of the effectiveness of each item of the C.A.S.C.

(i) Delinquency/Non-Delinquency, Locus of Control and Self-Esteem

A test of the first hypothesis showed in a definite manner, that delinquency can, and in this instance, did strongly relate to both the direction of attribution and the level of self-esteem. To what extent the locus of control aspect of the

result was due to the rationale of constructing a locus of control scale around familiar sources of reinforcement control, cannot be said at this stage since other studies (cf. Chapter II, Section E) using generalized locus of control scales, have also shown that delinquents tend to be more externally oriented than non-delinquents. Thus, in terms of the predicted differences one cannot be too surprised by the results, although it is already something that a new scale on different rationale could obtain results similar to previous ones. What is surprising, and may as well be said here, is that the mean internal scores of both experimental and control groups were found to be as high as they were compared with the ideal cutting-off point of 15 on a 30 - item scale scored 1 or 0. In brief, the C.A.S.C. still leaves something to be desired.

In view of this, detailed scanning of the responses of both delinquents and non-delinquents to each item was found useful in revealing the effectiveness or otherwise of each item in discriminating between groups of subjects in the fifteen choosen areas of reinforcement control. Taking the fifteen sources one at a time, the scanning showed the pair of items referring to the first source, father, to have been effective, thus indicating that the differences, such as they were between delinquents and non-delinquents were real. The same conclusion was reached with regard to the items referring to the second source, mother. What then is the significance of the pattern of differences between the two subject categories in regard to these parental sources? It does not appear that it was by chance that delinquents and non-delinquents were non significantly different from one another in regard to positive reinforcements, but were significantly different in regard to negative reinforcements emanating from both parental sources. The pivotol role of parents in the socialization of the young is incontrovertible, and since there are strong indications from these results that

delinquents tended to have more problems from parental sources than non-delinquents, there seems to be a need in circumstances of this kind, to do a complementary study of the attributional tendencies of the parents of such youngsters as a way of facilitating therapeutic assessment. If such a step is accompanied by interviews, case histories, etc; the value could be immense. Thus, the identification of probable sources of conflict in this way could, it seems, be a vlauable aid to efforts at initiating treatment of the behavioral and relational conflicts, not only of young offenders, but also of non-offenders with problems. Moreover, given the effectiveness of the relevant items, even if offenders were found to be non-significantly different from non-offenders in respect of a particular source/s of control the information could still be of value to a therapist wishing to begin treatment from non-sensitive areas of the life space. A non-deviant perception of reinforcement control from one source could provide clues as to how a deviant perception of reinforcement controls from another source could be steered back in any single individual.

At the end of the scanning of items relating to all the fifteen sources, it was indicated (cf. Chapter IV, Park X(a)) that the criterian of selecting items with non-significant biserials of .20 or more, could have affected the results in TABLE IV.11 in as much as a number of such items yielded non-significant differences between delinquents and non-delinquents. It is considered that this may have been the case with items of the third source-siblings - and so to clear away doubts the two items should be refined in a future C.A.S.C. which includes that source. However, the non-significance of item biserials did not invariably result in non-significant differences.

The positive item of the fourth source, self, had a non-significant r bis while the negative one had a significant r bis and yet in both instances, delinquents were non-

significantly different from non-delinquents. However, one peculiarity of this source was that both delinquents and non-delinquents were highly external in respect of thepositive item and highly internal with respect to the negative one. While this could indicate the unsatisfactory nature of the items, it could also reflect how easily a rewarding source of control could influence the selves of young people, and how difficult it could be for a non-rewarding source to exercise such an influence. This has implications for the management, by sources of control, of rewards and punishments in the bringing up of young people. This issue raises a new question regarding internal-external locus of control: Do people score externally in instances in which they regard the consequences as trivial and non-injurious to the self and internal in other circumstances, or is there really a socialized tendency to be internal or external? A replication of the study would take this result beyond the sphere of speculation.

In the same vain, the items of the fifth source, peers, did not both have significant r bis and yet they yielded highly significant differences between delinquents and non-delinquents, with the former being more external. However, in terms of the implications of these results, it is not easy to explain why non-delinquents were significantly more internal in respect of peers than delinquents, especially where sociological literature (eg. Yablonsky, 1970) would lead one to believe in the great importance of peers to delinquents. The clue may, however, lie in the purposes for which peer companionship is sought. For instance, as Gibbens et al. (1963) have indicated, companionship of this type may have value for certain kinds of theft of psychological interest to delinquents. Establishing evidence of that kind from a locus of control point of view would require studying locus of control with regard to types of offence, an aspect which institutional circumstances did not allow in respect

of this study but which further research could show to be rewarding.

Both items of the sixth source, sex partner, also discriminated effectively and significantly between delinquents and non-delinquents, showing delinquents to be more external in the perception of sex partners than non-delinquents. Knowing that the acquisition of sex companions is the desire of most youths, it is relevant to say that if, as is indicated here, delinquents are found to have distortive perceptions of sex partners, remedial action should be taken, for, heterosexual relationships play significant roles in the successful rehabilitation of such young people.

It was noted that the positive and negative items relating to the seventh source, teacher, were effective though they respectively produced significant and non-significant differences between delinquents and non-delinquents. An interesting feature of this result was that the two groups of young people did not differ significantly in the perception of negative reinforcements from the teacher. Whether or not one should see this result as indirectly reflecting the general suspicion of teachers by delinquents irrespective of the associated reinforcements, and suspicion by all young people in regard to negative reinforcement from the teacher, is hard to say. However, in an educational problem setting, a result of this kind could be the start of a more detailed investigation of teacher-pupil relations.

The responses of both delinquents and non-delinquents to items of the eigth source, family doctor, were found to be strongly biased towards the internal end of the scale, a phenomenon which shows the items to be perhaps too direct and too simple. In spite of this, they appeared relatively effective, to the extent that delinquents were found to be significantly more external than non-delinquents in respect of the negative item.

The acceptability or at least tolerability of both positive and negative reinforcement control from a person of a family doctor's status is often taken for granted in society for the sake of life itself. That delinquents perceived negative reinforcements from such a source in a significantly external manner, could indicate a general tendency to resist control from any kind of authority figure, irrespective of the social status of such a figure. When authority is rejected for the sake of rejecting it, then something pathological is involved. So encouraging delinquents not to reject authority figures indiscriminately, could make their day to day living less conflict oriented, and therein could lie a path to general behavioral reorientation.

No significant differences were found between delinquents and non-delinquents in respect of the two items relating to the ninth source, pop/T.V. Star. It is thought that because of the apparent pervasive influence of the Pop/T.V. culture on all young people, such a difference might be difficult to obtain but that if obtained its qualitative value for the study of young people would be great. It is to be noted that the two items of this particular source of reinforcement control had significant r bis and thus seemed effective as they stood.

Of great interest too are the responses of young people to reinforcements from the police. In this instance, non-delinquents were significantly more internal than delinquents in regard to positive reinforcements coming from the police. But the fact that in regard to negative reinforcements from the police, no significant difference was found between the two groups indicated the extent to which young people may be distortively perceiving the ;police. This interpretation is supported by the fact that both groups were highly external (cf. data in Appendices C14 to C16) in respect of police negative (item 4), an item which produced a significant difference though its r bis was non-significant. Negative reinforcement from the

police could have some added significance for youths. Whatever the case, it neither helps law and order nor does it help to prevent crime, for the role of the police to be distortively perceived by any age group within society. Steps need therefore to be taken to encourage realistic perception of the role of the police. This should include a re-examination by the police themselves of their traditional ways of projecting themselves to the public.

Related to the role of the police are the roles of institutions (the eleventh source) like schools and prisons. In this regard, non-delinquents were significantly more internal than delinquents in respect of the positive reinforcement (relating to school). But even more informative is the fact that as in the case of the police above, no significant difference was recorded between the two groups in regard to negative reinforcement which involved the subject ofprison. It would then appear that in both instances, it was the implied concepts of law and punishment, rather than the ineffectiveness of the items as such that brought about the non-significance of thedifferences observed. A replication would clearly be informative.

"Domestic animal", the twelfth source, was included in the scale to increase the range of familiar objects in the life spaces of young people. Although the r bis of the two items involved were not significant, and the items thus clearly need more work on them, the results do indicate that the use of an apparently unimportant source such as this, could serve effectively in sorting out children with behavioral problems. For with what little effectiveness the items were endowed, delinquents were shown to have been significantly more external than non-delinquents in regard to the negative item involved here, but not in regard to the positive one.

With regard to "physical environment", the thirteenth source the scanning of the results had shown the positive item with a

non-significant r bis to have also produced a non-significant difference between delinquents and non-delinquents, leaving little doubt that refinement of that item was called for. But an important observation was also made, namely, that in this, as in several other instances (about five - CF. TABLE IV.11), the fact that significant differences tended to occur more often with regard to the negative member of a pair of items, could indicate an important qualitative difference in the perception of reinforcements by delinquents and non-delinquents, quite unrelated to the ineffectiveness of the positive member of thepair. This difference can be seen more clearly in the section of results (Chapter IV, Part XI) dealing with preferences for positive/ negative reinforcements. There is a further way of interpreting the significant finding in regard to this particular source of reinforcement control. Assuming for not that the negative item relating to "physical environment" was effective, the fact that non-delinquents were more significantly internal than delinquents in regard to this non-rewarding appect of the environment (ie. the absence of playgrounds) could serve to show, among other things, that while delinquents may often have to contend with the non-availability of such amenities, non-delinquents quite often do not have to contend with such an inconvenience in their more favourable environments, and that in itself may be one reason why they do not seek delinquent solutions in the first place.

It was apparent that items referring to the fourteenth source, inanimate object, could not discriminate effectively between delinquents and non-delinquents because the responses of both groups were heavily biased in the external direction in one case and in the internal direction in the other. The discriminant abilities of the two items need strengthening through the reduction of bias.

Lastly, and unlike the other instances, delinquents were found to be more internal than non-delinquents with regard to positive reinforcements from the fifteenth source, luck. Assuming that

both items were relatively satisfactory, the fact that both groups of subjects scored externally in respect of the two items may have some social significance. It may indicate the role believed by young people to be played by luck in their lives. In terms of delinquency proneness, for instance, one implication would be that young people have a tendency to dare conventional norms in many areas of life - believing that it is the unlucky who gets caught!

On the whole, then, the results of the scanning of responses to individual items of the C.A.S.C. shows the ineffectiveness or unsatisfactory state of several identifiable items whose discriminant abilities need improving to make a future C.A.S.C. more useful. At the sametime, some items, even with non-significant biserials, could have shown a genuine lack of significant differences between delinquents and non-delinquents, depending on the social or other significance of the source of control to young people. A replication of the study might help to clear doubts in this respect. Nevertheless, considering that the C.A.S.C. was meant to be an experimental scale in an exploratory study, enough satisfactory items appear to have existed to give support to the original results of the analysis of variance, to the effect that delinquents, as predicted, were generally more external than non-delinquents, and that the rationale of studying the causal attribution tendencies of young people in this way was justified. This conclusion gets strong support from the results of the analysis of variance of scores from the self-esteem measure, a far better standardized and longer used scale. For, those results showed a pattern similar to the C.A.S.C. results, indicating again that delinquents performed significantly less well than non-delinquents. This bears out the views of Fitts (1965) that those who have a highly unrealistic concept of self, tend to approach life and other people in unrealistic ways, and that

those who have very deviant self-concepts tend to behave in deviant ways (the attribution of causality not excepted).

In spite of the findings thus far, this study cannot unravel the intricate connections between delinquency on the one hand, and external locus of control and low self-esteem on the other. Nevertheless, it is pertinent to ask the question "Did external control orientation cause delinquency or vice versa?" It would be ambitious to give an answer positing a straight causal link. But the learning theory base of external control suggests a tentative explanation. The review of the developmental antecedents of locus of control (cf. Chapter II, Section D) has shown that empirical evidence exists to link parental, especially maternal, locus of control orientation with children's control orientations. Moreover, child-rearing practices, eg. authoritarian - democratic attitudes, strictness untempered with freedom of manoeuvre, lack of suggestive directiveness, etc., have been associated with the development in children of external control orientation. In other words, in such circumstances, developing children tend to perceive themselves as helpless and powerless in the control of their affairs. These associations cannot, however, be called causal. But awareness by such children that alternative paths to their life goals exist could induce at least passive resistance to undemocratic control. Thus, some of these conditions, apart from organic and other mentionable conditions, could also predispose towards delinquency. What seems probable, then, is that both external control orientation and delinquency are linked by having many antecedent conditions in common. Lefcourt's (1976) conclusion regarding the causal relationship between helplessness and defensiveness also applies in this instance: "In all probability, the relationship is circular and perpetuated through a vicious circle, though there is little empirical data available to allow for certainty regarding this conjecture." p.95.

Virtually the same things said above about the relationship between locus of control and delinquency, can be said about the relationship between self-esteem and delinquency. Both appear to be rooted in experience and learning during the early stages of development. But having blossomed into two distinct socio-personality phenomenona, low self-esteem and delinquency seem to affect each other in a circular manner, perhaps more so for males whom society, conventionally, already expects to be controlling and self-asserting.

For external locus of control and delinquency, one therapeutic implication seems to be that relevant loci of reinforcement for delinquents, that is, those loci discovered through case histories, etc., should be identified, and then the amount of distortive attributions made by the delinquents, to such sources determined. Alternative and acceptable ways of perceiving these sources can then be encouraged. The term "distortive" is used advisedly, and its relevance becomes more evident when it is recalled, as stated earlier, that externality in control orientation is not in itself pathological or socially disadvantageous - witness its occurrence among all sections of society. What research has shown is its characteristic of predisposing its holder to more socio-personality disadvantages vis a vis conventional norm expectations, than would otherwise be the case. Nor should extreme internality be regarded as necessarily advantageous (cf. Rotter 1966). Thus the point of using the term "distortive" is that in therapeutic circumstances, identification of distortively perceived sources of reinforcement should, as Valins and Nisbett (1971) suggested, lead to the encouragement of patients to shift attributions of cause, sometimes to internal sometimes to external sources, depending on the circumstances of each case. For this to be possible, it seems, as argued earlier, that the use of specialized rather than generalized locus of control scales is inevitable.

As to how therapeutic use of the locus of control construct could be linked with the restoration of self-esteem, one may take a lead from the observations of Lefcourt (1976), thus; "Therapy, while at the same time encouraging a specific external attribution (or internal attribution), can oddly enough serve to reinstate the general sense of being able to act. In social learning terms, shifts in specific expectancies from internal to external (or vice versa) can be said to at times to encourage the return of confidence or generalized expectancies of control." p.94. One may add, then, that such a therapeutic shift from a damaging form of attribution to a constructive form, should also raise one's esteem of oneself and thus set in motion the unravelling of a complicated link between low self-esteem and delinquency, for instance. Thus therapeutic considerations in respect of delinquents should include deliberate measures aimed at helping delinquents to raise their esteem of themselves. As both low self-esteem and external control orientation may share many antecedent conditions, measures to improve one may result in the simultaneous improvement of the other. Further research should be aimed at a before - and after - treatment measure of the two constructs in a natural setting.

(ii) Intra-Delinquent Group Differences in Locus of Control and Self-esteem

This aspect acquired prominence in the course of the study and statistical treatment of it was primarily post hoc. It is an aspect in which non-significant differences seemed to convey more implications than significant differences. This seemed as true of the post hoc analysis by Schaffe's method (TABLES IV.5 and IV.6) as of the subsequent findings in respect of the responses of the subgroups to individual items of the C.A.S.C. In regard to the latter, it was additionally argued (Chapter IV, xb)

that even when the effects of the unsatisfactorily discriminant items were taken into account, one could still expect a large number of non-significant intra-delinquent group differences to arise, depending on the extent to which thehomogeneity argument applied, that is, the extent to which delinquent characteristics were common to the four subgroups considered. Accordingly, where significant differences actually occurred, important socio-personality implications might be involved.

It will be recalled that remand home and community home delinquents were of the same age range (14 to 16) and that borstal boys and girls were very much older(17 to 21). A comparison was made first of remand and community home subjects. The first thing that did emerge in the results of the post hoc analyses (by Scheffe's method) and later in results of the comparisons of responses to individual items, was that remand home delinquents in contrast to community home delinquents, were the most external in control orientation as well as the lowest among the delinquents, in self-esteem. Comment should perhaps be made first on this general aspect of the result.

Considering the nature (highly restrictive and security conscious) and purpose (remand for official decision and action) of the remand home, one is induced to ask the questions: Does the suspense inevitably involved in the period of remand adversely affect causal attribution and self-esteem? Does suspense increase pressure toward external attribution and a lowering of self-esteem, presupposing, of course, that these factors were in reasonable conditions at the time of entering the remand home? The answers to these questions are outside the present scope of this study, but they are legitimate and potentially helpful areas for further investigation. Meanwhile, one may speculate that the uncertainty involved in the remand status could increase the sense of helplessness and powerlessness in the inmate, make

him more likely to attribute event outcomes to forces beyond his control, make him lower his value and esteem for self, and may, at least for the period of suspense involved, make him fixate the delinquent path (leading, perhaps, to frequent attempts at absconding) more than would otherwise be the case. Should this speculation turn out to have substance, then one would suggest that, perhaps a shortening of the period of remand, at least through quick official decision-making,may bring therapeutic benefits to the inmate and socio-economic advantages to Society.

In contrast with the above, the nature of the community home is less restrictive, the atmosphere is affection - nurturing and responsibility - engendering, even at the high risk of abscondment. The fact that the sample drawn from this institution was of the same age range as the remand home sample, and yet generally, it was more internal in control orientation and higher in self-esteem raises interesting questions. For instance, it makes one ask whether community home status was a factor in the performance of the community home subjects. It is, of course, quite possible that the community home subjects sampled were already more internally oriented and higher in self-esteem than remand home subjects at the time of being sent into the home. Or, for that matter, they could have been selected for the home on the basis of their realistic perceptions of responsibility attribution both to self and to others. But it is also quite possible that the awareness of being in a less restrictive and more responsibility-giving institution (especially if they had experienced or known of a dissimilar one) was associated with the growth of both self-esteem and internality of orientation. Only further research would clarify the situation. Such research would also help in the administrative realm by indicating the emphasis to be given to the length of stay in the different institutions for the delinquent. All the present study has done in this instance is to indicate the

possibility of an interaction between the type of institution and the attributional orientation and self-esteem of delinquents.

On a more specific note, the results of the analysis of responses to individual items had shown that in spite of the strong general tendency of community home subjects to perform better than remand home subjects, both subgroups still appeared to have a lot of delinquent characteristics in common - characteristics indirectly indicated by the non-significance of differences between them in all but two items - sex partner (negative) and domestic animal (positive). The role of unsatisfactory items in this cannot be denied, nor can one ignore the fact that comparison of the two groups in terms of self-esteem also produced a non-significant difference (cf. TABLE IV.6)

These results appear to touch on basic issued of group and individual testing. It seems, from looking at the intra-delinquent group differences here, that for diagnostic reasons, greater advantages would be derived from establishing the locus of control orientations and self-esteem of individual delinquents, than from comparing them with one another. Delinquent/non-delinquent comparisons are a different matter as appears from the results of this study.

All of the things said above about the comparison of remand and community home subjects, apply with equal and sometimes greater intensity to comparisons of either subgroup with the much older borstal boys and girls. For instance, while the performance of the remand home subjects appeared more depressed vis a vis those of borstal boys, the relative performance of the community home subjects appeared further enhanced, thus reinforcing the possibility of the influence of institutional characteristics like, the degree of restrictiveness, the measure of responsibility engendered by the institutional atmosphere, the degree of uncertainty/suspense involved, etc. It would

take a far more subtly designed and executed study to test these points but the results might be well worth the effort in terms the associated social and administrative significance. The homogeneity argument applied with great force, too, to comparisons of the younger with the older delinquents and between the older delinquents in respect of whom the factor of sex played some part. But in all of these cases, the homogeneity argument was backed by results of comparisons in terms of self-esteem.

To end this subsection with a reference to the effectiveness/ ineffectiveness of the C.A.S.C. items, it could be said that in spite of the probable effects of the commonality of delinquent characteristics, significant differences occurred on more than one occasion between the different delinquent subgroups on items which appeard most effective and which referred to peers, sex partner, teacher, and physical environment. The structural features of those items could thus be guides as to how any restructuring of the less effective items could be done.

(iii) Sex Differences in Locus of Control and Self-Esteem

To maintain continuity with the above section in intra-delinquent group differences, delinquent girls may be commented upon first. Their performance in locus of control and self-esteem were found in the original analysis to be relatively, though non-significantly, more external in theone case and lower in the other than those of a comparable group of delinquent boys (boratal boys). In spite of the ineffectiveness of some items of the C.A.S.C., this trend was also perceptible in the study of responses to individual items. Compared to much younger delinquent boys, delinquent girls also seemed to have performed below expectation. In view of this, one may speculate that, in line with criminological findings that males tend to be more prone to delinquency and actually more delinquent than females, the few girls convicted of delinquency could perhaps be both more

external in control orientation and lower in self-esteem than convicted delinquent boys. Some support for this speculation can be found in a study by Johnson and Gormly (1972) of school children whose behaviour would not even be viewed gravely in terms of criminal law. They classified fifth-grade boys and girls into cheaters and non-cheaters on the basis of a behavioral test. They found female pupils who had cheated to be more external than their non-cheating counterparts. What is more, although male pupils who had cheated had results in the same direction as cheating females, the differences between cheating and non-cheating males were decidedly less extreme than those between females.

This aspect of the results of this study, along with those of Johnson and Gormly imply that convicted delinquent girls could be feeling much more helpless and personally more worthless than their male counterparts. It is possible that the awareness of their minority status in the area of delinquent behaviour and hence their much deeper sense of isolation or deviation from societal female sex role expectations might intensify this feeling of helplessness and worthlessness. This is a kind of feeling that could be regarded as capable of leading to despair, and hence to increased rather than lessened delinquent behaviour. In other words, the interaction of sex role expectations, delinquency, external control orientation and low self-esteem could be creating for girls a circle more vicious than might be the case for boys. These explanations are, of course, largely hypothetical. Concretizing them and testing them in further research could indeed yield interesting results.

Turning now to sex differences as it involves non-delinquent females, one may note as of importance the fact that the homogeneity argument used to explain, in part, intra-delinquent group differences, did not seem to apply here. This view is supported by the fact that, although almost as many non-

significant differences were found in the sex comparisons data as in the intra-delinquent group comparisons data, the additional support found earlier from corresponding self-esteem data, was not found here. In other words, while for several reasons sex differences in locus of control were non-significant, sex differences in self-esteem were highly significant, and in favour of males. This situation has raised a number of issues, the most obvious being the relative effectiveness or otherwise of the C.A.S.C. items as revealed by the analysis of responses to individual items. This may not have precluded the second issue, namely, that some of the non-significant differences may have indicated a genuine lack of sex differences in respect of at least some sources of reinforcement control. An even more interesting issue relates to the fact that the general trend of locus of control data as indicated by the mean scores (cf. Appendix C13), and the two specific instances in which significant sex differences were actually found, showed, contrary to previous findings (cf. Chapter II, Section G), that females were more internal than males.

The two specific instances involved "sex partner" and "police". That females were so strongly and significantly internal in respect of sex partner seems a justification of the conventional belief that, in general, females are more mature than males in matters of sexual affiliation. That females were also as significantly internal as they were in relation to the police, leaves one with the strong impression that males are more distrustful of the police - with overtones of the criminological finding that males are more prone to delinquency than females. One who has a tendency to think in terms of behaving in a socially disapproved manner, cannot fail to be struct also by the presence of those who are entrusted with preventing the commission of socially disapproved acts. It was noted, too, that males were more internal than females in

respect of luck (positive). It is not immediately apparent why females should be more ready to entrust themselves to fate or luck (of a favorable kind) than males, but that is what the data here seem to indicate.

One of the main reasons given in previous findings for females being more external than males had been that child-rearing practices and societal sex role expectations have conditioned women to feel powerless and hece to become more externally oriented than men. Such expectations may encourage a within-same-sex competition for power and control, but discourage competition for power and control between (or across) the sexes. In view of this conventional role dichotomy, it is fair to device common psychological tests and scales for both sexes? Maybe many existing locus of control scales have failed to be sufficiently fair to both sexes or either sex, hence the findings of female externality. Maybe each testee looks for and takes what there is in every test or scale for his or her own sex. Or as Lefcourt (1976) stated: "----- the verbal expression of perceived causality has different meanings for males and females, at least in so far as scores on current assessment devices are concerned." p.146. In order to find out the real situation respecting sex differences in locus of control a lot more needs to be done in terms of taking into account the apparently pervasive factor of sex role expectations, as well as the not unrelated factor of the relevance of locus of control scale contents to matters that are sufficiently involving for both sexes.

There is need for a more specific mention of sex differences in self-esteem. As stated earlier, sex differences in self-esteem had been highly significant (in contrast to the case with regard to locus of control), showing female controls to be significantly lower in self-esteem than their male counterparts, as well as showing female delinquents to be lower in self-esteem,

albeit not significantly so, than a comparable group of delinquent boys. Thus while female controls tended to be more internal than male controls, the reverse was the case with regard to self-esteem. To the extent that sex role expectation plays a part in a study of this kind, such a part, would, theoretically, seem likely to show itself very distinctly in a subject's evaluation of himself or herself, whether the means of that evaluation be pencil and paper scaling, verbal report or actual behaviour. From this point of view, it would not be surprising if, in line with societal expectation of modesty in women, girls esteem themselves significantly less highly than boys, as seems to have been the case in this instance. Indeed, in the area of ability attributions, Nicholls (1975) found females to have gone beyond being modest to being self-derogatory in ability attributions.

(iv) Social Class Differences in Locus of Control and Self-Esteem

The hypothesis that there would be social class differences in both locus of control and self-esteem was clearly not supported by the data of this study. Given the ineffectiveness of the C.A.S.C. items, one still feels convinced, from examining the results of the comparison of responses to individual items, that social class differences were minimal. An important feature of this result is that it is contrary to most previous findings (cf. Chapter II, Section F) from which collective evidence is to the effect that the socio-economically disadvantaged are generally more external in control orientation than middle-class people, and that minority groups - Negroes, American Indians, Spanish Americans, Mexican Americans etc. - have lower expectancies for success and more limited opportunities, and hence more external in control orientation than other

Americans (cf. Rotter, 1966; Joe, 1971; Lefcourt, 1972, 1976).

Since social class differences in self-esteem were not reviewed in this study, nothing much more can be said with certainty in that regard, other than that the results in this study bear out the results in respect of locus of control.

However, it ought to be added regarding locus of control that such literature as was found relevant to theissue was virtually all North American based. In contrast, this study is Anglo-Welsh based especially regard to the legal definitions of delinquents and the classification of occupations/education by the Registrar General whose records guided the categorization of subjects into the various social classes. That the results in respect of both the unrefined scale (C.A.S.C.) and the better researched one (T.S.C.S.) were so far from significance, causes some surprise in a society presumed to be still very class conscious. However, it is quite possible that modern social and economic conditions have blurred the social class boundaries, psychologically, and that there could well be greater expectations of, more opportunities for, and more actual class mobility than is consciously realized. That, however, is a sociological issue which is beyond the defined scope of this study. But as far as Britain is concerned, the question of social class differences in locus of control and self-esteem would bear further investigation.

(v) The Effect of Age on Locus of Control and Self-Esteem

In general, the locus of control construct has been found sensitive to age (eg. Rotter, 1966; Joe, 1971), hence the growth in the number of locus of control scales for children (cf. Chapter II, Section H, ii), and hence the reason for advocating the construction of specialized locus of control scales to take account of the limited generalization experiences of

children. As is apparent from the results above, age differences were generally non-significant. These results do not, however, weaken the case for locus of control scales tailored to suit the limited life experiences of children. For, it was apparent that the fault lay to a large extent with the weakness of several items of the C.A.S.C. which appeared too unsophisticated for most of the subjects. It was also apparent from examining the items that were effective, that if the C.A.S.C. had been more refined, previous results would have been confirmed. As noted earlier, a problem which besets the construction of a scale like the C.A.S.C. is that of establishing an appropriate difficulty level for an age range such as was envisaged here. However, it cannot be accepted as an insuperable problem.

Turning to the self-esteem variable, one notes that the age main effect in regard to self-esteem (TABLE IV.4) was also non-significant. But this is as it should be in view of the statement by Fitts (1965) that the Tennessee Self Concept Scale was standardized on people between the ages of 12 and 68.

(vi) The Interactions of Variables

With regard to locus of control, the interactions between the main variables of category, sex and age were not significant and the reasons may lie in the non-significance of the social class, sex and age main effects, and ultimately, perhaps, in the ineffectiveness of several items of the C.A.S.C. With regard to self-esteem, however, two interactions were found significant. The first of these was the categories by age interaction. A closer study of the data shoed that above the delinquent status and in Category I (social classes I and II) , the level of self-esteem seems maintained from adolescence (younger) through teenage ((older). In Category II (social classes III and IV), however, the level of self-esteem is as high among the younger subjects

as among all subjects in Category I. But it appears that as subjects in Category II grow older, a dramatic fall in the level of self-esteem sets in. In this study, it is within Category II that the Category X age interaction, appears to be more potent. Thus, for whatever other reason, lower-class status seems to carry with it a certain amount of loss of self-confidence and self-esteem with age, that is, with perhaps increasing awareness of the prospects of life the hard way. Delinquent status seems to involve the opposite phenomenon from that in Category II. The greatest loss of self-confidence seems to occur among the younger delinquents compared with the younger non-delinquents of both Categories I and II. However, without a more detailed study, including the study of case histories, it cannot be inferred from the present data the reasons for older delinquents having higher self-esteem than younger ones or vice versa.

A closer study of the significant sex x age interaction shows that while males, in general, tend to increase in self-esteem with increasing age, females seem as high in self-esteem as males when they are young but seem to level off or actually decline in the growth of self-esteem as they grow older. This interaction effect may, in respect of females, be explained in terms of increasing self-derogation and under-estimation as awareness of sex role expectations increases and as those roles are assumed. For males on the other hand, sex roles may be linearly related to increasing self-esteem and age.

(vii) Preferences for Types of Reinforcement

In this aspect of the study, delinquents, in contrast to controls, were found to have had a significantly higher proportion of preferences for positive responses to reinforcement control than for negative ones. This gives general support

to results of the analysis of responses to individual items, and seems in line with previous findings. For instance DuCette et al (1972) found that lower class black children in one study and low I.Q. children in another study, all of whom were defined as problem children, rated themselves as more internal for success than for failure outcomes on the Crandall I.A.R. Scale. As against this, problem children who were white but were also of high I.Q., rated themselves as more internal for failure than for success outcomes. It seems, however, that delinquents' responses to both positive and negative reinforcements can be used effectively by the therapist. As Taylor (1968) would put it, reactions to sources of reinforcement control should be seen by society and its agents not only as methods used by the delinquent in order to gain control, but also as reactions to an inability to control. Indeed, aberrant acts by most people, not merely the convicted delinquent, could be interpreted in this way as well. For there is a danger that, perhaps in desparation, society, through its appointed agents and through its general attitudes, may display such a misunderstanding of the motives behind delinquent acts, as to regard the actors as perhaps a little less than human - a situation which would in turn induce delinquents to so behave as to make the prophesy fulfill itself, thus, entrenching the vicious circle that is the consequence of labelling.

(viii) The Relationship between Locus of Control and Self-esteem

Lefcourt (1976) had observed that "Locus of Control and Self-esteem are not identical though an internal locus of control should make positive self-esteem a more likely and frequent occurrence." P.94. The observation is in remarkable consonance with this study's hypothesis concerning the relationship between

the locus of control and the self-esteem of delinquents and non-delinquents. The general agreement between the C.A.S.C. and the T.S.C.S. found in the study of differences, was found also in considerable measure in the study of the relevant relationships. Many people would not be surprised that internal locus of control and self-esteem correlated poorly for delinquents. It was however a little surprising that correlations for female controls were also relatively poor especially since the highest locus of control scores were made by them. But in the context of sex role expectations, and the not unrelated apparent inclination of females toward unnecessary modesty or even self-derogation (Nicholls 1975), the surprise becomes diminished, especially when it is noted that even among delinquents, the poorest correlation was recorded for female delinquents. It underlines once again the need for examining in coherent detail the facts about sex role expectation, followed by a study of its effects on the personality dynamics of women as reflected in current psychological tests and scales - locus of control scales included.

With males in general, and male controls in particular, coming out better in this respect, one may conclude that locus - of-control/self-esteem correlations do reflect considerable developmental similarities or antecedent conditions in the two constructs, to the extent, as seems to be the case in this context, of reflecting also the differential treatment that society may be according males, females, and young offenders.

One could infer from the above that society, through its role expectations, mounts a certain amount of pressure on males to esteem themsleves capable of reaching any physical and/or psychological limits, at the same time as defining lower limits for females. It may be asked whether these pressures towards role fulfillment through self-assertiveness do not often prove too much for many males, especially as oft assumed opportunities

for reinforcement control and management take little account of the fact that socio-personality life spaces posit great individual differences vis a vis such opportunities. In the study of the effects on males of these expectations, it seems that the individual differences approach of psychology can ill be underated. A further and highly pertinent question is whether the higher delinquency rate among males, has any relationship to the pressures of these societal expectations and, if so, how strong that relationship is. Could a more rapid modification in societal attitudes towards the expected roles of females not turn out to be a safety valve for the tensions that could be accompanying an apparent over-glorified supremacy of the male? The relevance of these questions does not seem diminished by the fact that they are wide and complex, and it seems they could bear not only further psychological investigations, but perhaps related medical and sociological ones as well.

There seems to be a probability that a re-examination of some of the expected roles of the two sexes would be accompanied by a more understanding attitude towards the casualties among the expected fulfillers of those roles - delinquents included, especially where the etiology of delinquency relates to perceived powerlessness to fulfill expectations.

(ix) Limitations of the study

There must be many limitations in a study of this kind. For one thing, its scope is smaller than the details which many of the questions it raises would warrant. In the first place, one is aware of the heterogeneity of states covered by the term "delinquent." As mentioned earlier in the aims of the study, investigations in terms of "type of offence" might have

shown some of that heterogeneity. It is therefore a limitation of this study that one had no access to the case records of the subjects, as these might have yielded some useful information. One also understands the point of view of the authorities concerned, since an unscrupulous researcher might give away something confidential to subjects. Residential researchers are better placed for that kind of investigation, and future researchers might consider acquiring residential status as this would more easily dispel the fears of the authorities.

But turning to other limitations of the study, one notices that in spite of its effectiveness in discriminating between delinquents and non-delinquents, and in spite of the support given it by the more highly researched and longer-tested Tennessee Self Concept Scale, the C.A.S.C. stands in great need of refinement. This need is made more glaring by the scanning of the items individually for effectiveness. Further work on those lines should give a useful research and clinical locus of control scale for young people. Moreover, better sampling stratification could have been achieved had access to establishments been a litted easier. For instance, samples of female remand home and community home delinquents could have resulted in a better match for delinquent subgroups.

Given the above limitations and many others that are discoverable, it is still felt that the rationale for constructing the C.A.S.C., if not the C.A.S.C. itself in its present state, is worth exploiting in studies of attribution. Thus, our suggestions for further research must of necessity include the pursuit of that rationale. Locus of control and type of offence should also be investigated. Moreover, more still needs to be done in the area of sex differences in locus of control by way, as was mentioned earlier, of examining incoherent detail, the facts about sex role expectation and its effects on the personality dynamics of women as reflected in current psychological

tests and scales including locus of control scales. A lot of administrative and other advantages could be achieved by studying the effects of various institutions and transfers between and within institutions on the control orientations and self-esteem of inmates. The interaction between delinquency, sex role expectation and locus of control needs even more research attention. And, social class differences (or its dissolution) in locus of control should be investigated further in the wider context of the U.K., if for no other reasons, at least (a) for reason of comparison with North American findings, and (b) for the reason that the U.K. is conventionally believed, not least by its citizens, to be more class conscious than most!

(x) Conclusion

There is not only an inherent urge in man to seek to answer the question "why" - the question of attributing causes - but also a value for man in at least attempting an answer. It is, however, a mark of the elusiveness of the answer/s to that question in the science of psychology in general and social psychology in particular, that complete and definitive answers never seem to be within reach. This study was no direct attempt at an answer but an investigation of the directions and modes of answering that question by young people in regard to event outcomes within their life spaces. As the list of noted and notable limitations has revealed, not even this search for an answer to the related but the vital questions of "how"? and "whither?" could be water-tight.

Nonetheless, in view of these and previous findings, proppects seem bright for the use of attribution constructs in general and the locus of control construct in particular, in the clinical practice of helping the delinquent, among other clinical groups. For instance, the combination of the C.A.S.C.

and the T.S.C.S. in this study has given a strong indication that, together, both scales could be effective aids in the detection of delinquency and delinquency proneness as well as in helping the delinquent to recover. With regard to the treatment of already convicted delinquents, the methods and hypotheses tested in this study, however clumsily, may not only help to establish the pre-treatment commitment of delinquents to distortive perceptions of sources of reinforcement control, but could also help in the monitoring of moves towards or away from realistic perceptions of control in the course of treatment. Thus, it is hoped that other searchers and researchers will find their thoughts stimulated and their appetites whetted somewhat by the little that has been set down here.

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APPENDICES

APPENDIX A1.

CASC: FIRST VERSION.

DIRECTIONS

The questions on these sheets are only for finding out about the way you feel, nothing more. This is what you do first:-

SECTION ONE

Take the "ANSWER SHEET" in front of you. In SECTION ONE of the Answer Sheet, fill in your name and all the other bits asked for.

If you have any difficulty raise your hand for help.

----oOo----

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THIS IS WHAT YOU DO NEXT:-

SECTION TWO

In this section you will find some very simple questions. Each question has a number which you can also find in SECTION TWO of the ANSWER SHEET. CHECK and see that this is so.

For every question you are given two answers, a or b. No answer is wrong or right. So, for each question all you have to do is choose only ONE answer that your mind tells you is better.

Then, turn to the ANSWER SHEET, and put a check mark, X, in the box that goes with the answer you have chosen.

The answer you choose will not be shown to anyone else.

Here is one question as an example:

If your cat ate your breakfast, would it be:

a) because the cat is bad

OR

b) because you did not give the cat something to eat?

If you choose (a), then put your check mark like this:

a) [X] (b) [ ]

But if you feel (b) is better, then mark it like this:

a) [ ] (b) [X]

Mark only one box each time but let it be the box that goes with the answer you have chosen.

NOW, GO AHEAD, beginning with No.1 till you get to the end.

If you have any difficulty raise your hand for help.

CASC FORM B

Questions

1. If you stepped on your sister's toe and she cried, would you tell her:
   a) That she shouldn't have been there in the first place,
   OR
   b) that you were sorry about it?

2. If you lived where you could find good playgrounds, would you say:
   a) That you ought to be thankful for it,
   OR
   b) that you owed nothing to anybody?

3. Supposing you walked into your bedroom one night and then you slipped and fell over a chair, would you:
   a) Fling that chair right out through the window
   OR
   b) say that you should have been more careful?

4. If a policeman saw you in the street late at night and started following you around, would it be:
   a) because the police don't mind their own business
   OR
   b) because you should not be out late at night?

5. Supposing your teacher tells your parents that you are doing fine with your school work, would that be:
   a) because your teacher likes you
   OR
   b) because you try to work really hard at school?

6. Supposing your mum always came home with some presents for you, would it be:
   a) because you are a good boy
   OR
   b) because she is just following other mums?

7. Supposing you won a cycling race on your new bicycle, would you say:
   a) that your new bicycle helped you to win
   OR
   b) that you could have won on any old bicycle?

Jumbeena

Questions

8. Supposing you are showing your brother how to play cards and he learns it fast, would it be:

   a) because you tried hard to explain it well to him

   OR

   b) because your brother is a clever boy?

9. Supposing your T.V. star fought and defeated five gangsters, would it be:

   a) because your T.V. star was a trained fighter

   OR

   b) because the five gangsters did not fight their best?

10. Supposing you and your mate were riding along on your bicycles and then you suddenly crashed into one another and had bruises all over, would that be:

    a) because you yourself were somehow at fault

    OR

    b) because your mate was a poor rider?

11. When you feel proud of your girl friend is that

    a) because she always likes playing love games with you

    OR

    b) because she does not bother you much about playing love games?

12. When your Mum gets mad at you and wants to give you a good licking, is it:

    a) because your mum likes to punish you for every little thing

    OR

    b) because you don't help her with the house work?

13. If a policeman sees you in the street and helps you to cross the road, is that:

    a) because the policeman is friendly

    OR

    b) because he is just trying to know what you are up to?

14. If your Dad punishes you every now and then, is it:

    a) because your Dad is hard on you

    OR

    b) because you always do what he says you should not do?

15. If you put all your money on a horse but won nothing at the end of the race, is that:

    a) because it is no good trying to get money the easy way

    OR

    b) because it wasn't your lucky day?

Questions

16. If you live where playgrounds are hard to find, is it:

a) because this world is rather cruel to you

OR

b) because you don't both to look for a playground somewhere?

17. If your dog ate all your dinner, would that be:

a) because the dog was bad

OR

b) because you did not put your dinner in a safe place?

18. If you get beaten the whole time in a game of cards, is it:

a) because the other fellow really knows the stuff

OR

b) because you still have a lot to learn about the game?

19. If you and your mates always stick together the way real mates should, is that:

a) because you all know you can do lots of things together as good mates

OR

b) because your mates just want to have you so they can boss you around?

20. Supposing you forgot to put away your meatpie and came back to find that your dog was just looking at it without touching it, would you:

a) be thankful that the dog was so good

OR

b) be surprised the dog lost his chance of tasting the pie?

21. If your Dad says you are his best boy, is that:

a) because you always follow his advice

OR

b) because he just wants to tease you?

22. If you heard on T.V. that there was a riot in a big city prison, would you say:

a) that prisons are bad places to put people into

OR

b) that prisoners have themselves to blame for being in prison?

23. Supposing you are asked to say something about your school and the pupils in it, would you say:

a) that schools do a lot to make their pupils happy

OR

b) that it is pupils that really make schools happy places?

Questions

26. Supposing your doctor gave you a check-up and told your parents you were very healthy, would that be:

a) because you followed the doctor's advice to keep fit

OR

b) because doctors like to say nice things to parents?

27. If you saw your T.V. star in a gun battle with other fellows, could it be:

a) that your T.V. star started shooting first

OR

b) that the other fellows started shooting first?

28. If you quarrelled and packed it up with your girl friend, would it be:

a) because she didn't really like playing love games with you?

OR

b) because you wanted to play love games too often with her?

29. Supposing you got hurt when you went out and your doctor warned you to stay out of trouble, is that:

a) because he only wants to stop you going where you want

OR

b) because he really cares about your safety?

30. Supposing you won in a game of cards, would it be:

a) because you spent a long time learning the game

OR

b) because the other fellow did not know much about the game?

31. Supposing your teacher tells your parents that you are not doing well in school, is that:

a) because you don't really try your best in school

OR

b) because your teacher hates you?

32. Supposing your favourite football team won a match by just one goal, would you say:

a) that your team had to be lucky to win that match

OR

b) that your team really struggled hard to win the match?

NB : Alternatives reasoned to be internal are underlined.

APPENDIX A11: The C.A.S.C.

DIRECTIONS

The questions on these sheets are only for finding out about the way you feel, nothing more. This is what you do first:-

SECTION ONE

Take the "ANSWER SHEET" in front of you. In SECTION ONE of the Answer Sheet, fill in your name and all the other bits asked for.

If you have any difficulty raise your hand for help.

-----oOo-----

C.A.S.C.

THIS IS WHAT YOU DO NEXT:-

SECTION TWO

In this section you will find some very simple questions. Each question has a number which you can also find in SECTION TWO of the ANSWER SHEET.
CHECK and see that this is so.

For every question you are given two answers, a or b. No answer is wrong or right. So, for each question all you have to do is choose only ONE answer that your mind tells you is better.

Then turn to the ANSWER SHEET, and put a check mark, X, in the box that goes with the answer you have chosen.

The answer you choose will not be shown to anyone else.

Here is one question as an example:

If your cat ate your breakfast, would it be:
a) because the cat is bad

OR

b) because you did not give the cat something to eat?
If you choose (a), then put your check mark like this:

(a)	(b)
X	

But if you feel (b) is better, then mark it like this:

(a)	(b)
	X

Mark only one box each time but let it be the box that goes with the answer you have chosen.
NOW, GO AHEAD, beginning with No. 1 till you get to the end.
If you have any difficulty raise your hand for help.

C.A.S.C.

317

STATEMENTS

1. Supposing your brother or sister got a more expensive Christmas present than you, would this be:

   a) because he or she is liked more than you are,

   OR

   b) because he or she deserves it?

2. If you lived where you could find good playgrounds, would you say:

   a) that it was the duty of government to provide playgrounds,

   OR

   b) that you ought to be grateful for it?

3. Supposing you failed to win an important cycling race, would you.

   a) sell the bike to someone who offers really big money and give up racing,

   OR

   b) keep the bike for use in further cycling practice?

4. If a policeman saw you in the street late at night and started following you around, would this be:

   a) because the policeman wants to know what you are up to,

   OR

   b) because he wants to be sure of your safety?

5. Supposing your teacher tells your parents that you are doing well in school, would that be:

   a) because it is your teacher's duty to keep your parents happy,

   OR

   b) because your teacher notices some hardwork on your part?

6. If your Mum decided to come home with some presents for you, would it be:

   a) because it was one of her happy days,

   OR

   b) because of what you are?

7. Supposing you won a cycling race that made you famous, would you decide:

   a) to sell the bike to someone who offers you really big money for it,

   OR

   b) to keep the bike for ever to remind you of the win?

8. Supposing your brother or sister was teaching you how to play a game of cards and you learned it quickly, would it be

   a) because you are clever at picking up new games,

   OR

   b) because your brother or sister knew the right way to explain it to you?

9. Supposing you saw your T.V. star fight and defeat FIVE gangsters, would it be:

   a) because your T.V. star was a trained fighter,
   OR
   b) because the five gangsters did not fight their best?

10. When you go out with people of your age and they turn out to be unsatisfactory companions, is it

   a) because it is difficult to choose suitable companions,
   OR
   b) because you made the mistake of wanting companions in the first place?

11. Supposing you had a boyfriend or girlfriend and you got on very well with him or her, would it be:

   a) because it is easy to get him or her to do what you want,
   OR
   b) because what the two of you have in mind is often discussed?

12. Supposing your Mum got mad at you and felt like giving you a good beating, would it be

   a) because of what you did,
   OR
   b) because your Mum believes in punishing her kids to make them good?.

13. If a policeman saw you in the street and helped you to cross the road, would it be

   a) because he is just trying to know what you are up to,
   OR
   b) because policemen are friendly?

14. If your Dad punishes you often, is it

   a) because of what you do,
   OR
   b) because he believes in punishing his kids to make them good?

15. Supposing you lost the money you put on a horse, would you say

   a) you still stand a good chance of winning next time,
   OR
   b) that it is not worth taking a second chance?

16. If you lived where you couldn't find good playgrounds, would you say

   a) there is nothing a young person can do about such situations
   OR
   b) that what young people think about such things matter?

17. If your dog kept eating other people's foods against the will of the owners, would you say

a) that with good training the dog could stop that sort of behaviour,

OR

b) that no amount of training can stop a dog behaving that way?

18. If you get beaten the whole time in a game of cards, is it

a) because the other person really knows the stuff,

OR

b) because you still have a lot to learn about the game?

19. When you agree to be friends with people of your own age, is it:

a) because all of you will always agree on everything you do,

OR

b) because you feel you can go on being friends even when you disagree?

20. If a dog eats only when offered food, would you say

a) that the dog has received good training,

OR

b) that training or no training, the dog will eat when given a chance?

21. If your Dad speaks well of you, is it:

a) because your Dad is a pleasant man,

OR

b) because of what you do?

22. Supposing you are asked to give your opinion about prisons and prisoners, would you say:

a) that prisons are there mainly to punish prisoners for what they did,

OR

b) that prisons are there mainly to correct prisoners?

23. Supposing you are asked to give your opinion about schools and pupils, would you say:

a) that schools do their best to make pupils learn happily,

OR

b) that pupils do their best to give their schools good names?

24. Supposing your doctor tells your parents you will remain free from a disease that is spreading in your area, would it be;

a) because he has a way of knowing about such diseases,

OR

b) because he does not want your parents to panic?

25. When young people fail to make it as pop stars, is it:

a) because they picked an unsuitable job,

OR

b) because they haven't the luck which pop stars need?

26. Supposing you had a boy friend or a girl friend and you didn't get along very well with him or her, would it be:

a) because you didn't often discuss things together,

OR

b) because you didn't find it easy to get him or her to do what you wanted?

27. Supposing you got hurt when you went out and your doctor warned you to stay out of trouble, would it be:

a) because your doctor believes young people should be kept at home most of the time,

OR

b) because your health is his problem?

28. Supposing you win every time you play a game of cards, would you say:

a) that careful learning of the game is behind the win,

OR

b) that luck comes into it, learning or no learning?

29. Supposing your teacher tells your parents that you are not doing well in school, would it be:

a) because you don't really try your best in school,

OR

b) because your teacher hates you?

30. When your favourite football team wins a match, do you think:

a) that cheering has a lot to do with it,

OR

b) that luck has a lot to do with it?

NB. Alternatives reasoned to be internal are underlined.

CASC

ANSWER SHEET

SECTION ONE

1. Your name .....

2. Sex .....(male or female)

3. Date of Birth .....

4. Put down the number of brothers you have,
(plus yourself if you are a boy).....

5. Put down the number of sisters you have
(plus yourself if you are a girl).....

6. Are any of your brothers older than you?
(Yes or No)..... How Many?.....

7. Are any of your sisters older than you?
(Yes or No)..... How many? .....

8. Can you tell your Dad's job? (Yes or No).....

What?.....

9. Can you tell your Mum's job? (Yes or No).....

What?.....

PLEASE STOP HERE UNTIL YOU ARE ASKED TO GO ON.

CASC

ANSWER SHEET

SECTION TWO

Question No. 1.	a) ☐	b) ☐
Question No. 2.	a) ☐	b) ☐
3.	a) ☐	b) ☐
4.	a) ☐	b) ☐
5.	a) ☐	b) ☐
6.	a) ☐	b) ☐
7.	a) ☐	b) ☐
8.	a) ☐	b) ☐
9.	a) ☐	b) ☐
10.	a) ☐	b) ☐
11.	a) ☐	b) ☐
12.	a) ☐	b) ☐
13.	a) ☐	b) ☐
14.	a) ☐	b) ☐

INSTRUCTIONS

On the top line of the separate answer sheet, fill in your name and the other information except for the time information in the last three boxes. You will fill these boxes in later. Write only on the answer sheet. Do not put any marks in this booklet.

The statements in this booklet are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Do not omit any item! Read each statement carefully; then select one of the five responses listed below. On your answer sheet, put a circle around the response you chose. If you want to change an answer after you have circled it, do not erase it but put an X mark through the response and then circle the response you want.

When you are ready to start, find the box on your answer sheet marked time started and record the time. When you are finished, record the time finished in the box on your answer sheet marked time finished.

As you start, be sure that your answer sheet and this booklet are lined up evenly so that the item numbers match each other.

Remember, put a circle around the response number you have chosen for each statement.

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

You will find these response numbers repeated at the bottom of each page to help you remember them.

APPENDIX B1 : Items Selected from the ROTTER I-E SCALE

SECTION THREE

Here again, you are given a number of statements. Just choose, in each case, the statement you agree with most, and mark your answer on the second ANSWER SHEET in front of you.

	Number	STATEMENT
(2)	1.	a) Many of the unhappy things in people's lives are partly due to bad luck. b) People's misfortunes result from the mistakes they make.
(4)	2.	a) In the long run, people get the respect they deserve in this world. b) Unfortunately, an individual's worth often passes unrecognised, no matter how hard he tries.
(7)	3.	a) No matter how hard you try some people just don't like you. b) People who can't get others to like them don't understand how to get along with others.
(11)	4.	a) Becoming a success is a matter of hard work, luck has little or nothing to do with it. b) Getting a good job depends mainly on being in the right place at the right time.
(12)	5.	a) The average citizen can have an influence in government decisions b) The world is run by the few people in power, and there is not much the little guy can do about it.
(13)	6.	a) When I make plans, I am almost certain I can make them work b) It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
(15)	7.	a) In my case getting what I want has little or nothing to do with luck b) Many times we might just as well decide what to do by flipping a coin.
(18)	8.	a) Most people don't realize the extent to which their lives are controlled by accidental happenings. b) There really is no such thing as "luck".
(25)	9.	a) Many times I feel that I have little influence over the things that happen to me. b) It is impossible for me to believe that chance or luck plays an important role in my life.
(28)	10.	a) What happens to me is my own doing b) Sometimes I feel that I don't have enough control over the direction my life is taking.

B1: (1) Internal alternatives are underlined.

(2) Original items as in the complete Rotter I-E Scale are given in brackets.

SECTION THREE

ANSWER SHEET

1. (a) ☐ (b) ☐
2. (a) ☐ (b) ☐
3. (a) ☐ (b) ☐
4. (a) ☐ (b) ☐
5. (a) ☐ (b) ☐
6. (a) ☐ (b) ☐
7. (a) ☐ (b) ☐
8. (a) ☐ (b) ☐
9. (a) ☐ (b) ☐
10. (a) ☐ (b) ☐

APPENDIX BII: Copy of the Crandall SD Scale.

Name_____

Date_____

Grade_____

Birthdate_____

Sex (male or female)_____

This questionnaire lists a number of experiences that most children have at one time or another. Read each of these carefully. After you have read one, decide whether it does or does not fit you. If it does, put a T (for true) in front of the statement; if it doesn't put an F (for false) in front of the statement.

If you have any questions at any time raise your hand, and one of the persons who passed out these questionnaires will come and explain it to you.

___1. I always enjoy myself at a party.

F 2. I tell a little lie sometimes.

T 3. I never get angry if I have to stop in the middle of something I'm doing to eat dinner, or go to school.

F 4. Sometimes I don't like to share my things with my friends.

___5. I am always respectful of older people.

___6. I would never hit a boy or girl who was smaller than me.

F 7. Sometimes I do not feel like doing what my teachers want me to do.

___8. I never (act "fresh") or "talk back" to my mother or father.

___9. When I make a mistake, I always admit I am wrong.

F 10. I feel my parents do not always show good judgment.

___11. I have never felt like saying unkind things to a person.

T 12. I always finish all of my homework on time.

F 13. Sometimes I have felt like throwing or breaking things.

___14. I never let someone else get blamed for what I did wrong.

F 16. Sometimes I say something just to impress my friends.

T 17. I am always careful about keeping my clothing neat, and my room picked up! tidy

T 17. I never shout when I feel angry.

F 18. Sometimes I feel like staying home from school even if I am not sick.

F 19. Sometimes I wish that my parents didn't check up on me so closely.

T 20. I always help people who need help.

F 21. Sometimes I argue with my mother to do something she doesn't want me to.

T 22. I never say anything that would make a person feel bad.

F 23. My teachers always know more about everything than I do.

T 24. I am always polite, even to people who are not very nice.

F 25. Sometimes I do things I've been told not to do.

F 26. I never get angry.

F 27. I sometimes want to own things just because my friends have them.

T 28. I always listen to my parents.

T 29. I never forget to say "please" and "thank you."

F 30. Sometimes I wish I could just "mess around" instead of having to go to school.

T 31. I always wash my hands before every meal.

F 32. Sometimes I dislike helping my parents even though I know they need my help around the house.

T 33. I never find it hard to make friends.

T 34. I have never been tempted to break a rule or a law.

F 35. Sometimes I try to get even when someone does something to me I don't like.

F 36. I sometimes feel angry when I don't get my way.

T 37. I always help an injured animal.

F 38. Sometimes I want to do things my parents think I am too young to do.

F 39. I sometimes feel like making fun of other people.

T 40. I have never borrowed anything without asking permission first

F 41. Sometimes I get annoyed when someone disturbs something I've been working on.

T 42. I am always glad to cooperate with others.

T 43. I never get annoyed when my best friend wants to do something I don't want to do.

F 44. Sometimes I wish that the other kids would pay more attention to what I say.

T 45. I always do the right things.

F 46. Sometimes I don't like to obey my parents.

F 47. Sometimes I don't like it when another person asks me to do things for him.

F 48. Sometimes I get mad when people don't do what I want.

APPENDIX B.III.

TENNESSEE SELF CONCEPT SCALE

by

William H. Fitts, PhD.

Published by

Counselor Recordings and Tests

Box 6184 - Acklen Station Nashville, Tennessee 37212

INSTRUCTIONS

On the top line of the separate answer sheet, fill in your name and the other information except for the time information in the last three boxes. You will fill these boxes in later. Write only on the answer sheet. Do not put any marks in the booklet.

The statements in this booklet are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Do not omit any item! Read each statement carefully; then select one of the five responses listed below. On your answer sheet, put a circle around the response you chose. If you want to change an answer after you have circled it, do not erase it but put an X mark through the response and then circle the response you want.

When you are ready to start, find the box on your answer sheet marked time started and record the time. When you are finished, record the time finished in the box on your answer sheet marked time finished.

As you start, be sure that your answer sheet and this booklet are lined up evenly so that the item numbers match each other.

Remember, put a circle around the response number you have chosen for each statement.

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

You will find these response numbers repeated at the bottom of each page to help you remember them.

1. I have a healthy body 1

3. I am an attractive person 3

5. I consider myself a sloppy person 5

19. I am a decent sort of person 19

21. I am an honest person 21

23. I am a bad person 23

37. I am a cheerful person 37

39. I am a calm and easy going person 39

41. I am a nobody 41

55. I have a family that would always help me in any kind of trouble 55

57. I am a member of a happy family 57

59. My friends have no confidence in me 59

73. I am a friendly person 73

75. I am popular with men 75

77. I am not interested in what other people do 77

91. I do not always tell the truth 91

93. I get angry sometimes 93

Responses–	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

2. I like to look nice and neat all the time.....

4. I am full of aches and pains.....

6. I am a sick person.....

20. I am a religious person.....

22. I am a moral failure.....

24. I am a morally weak person.....

38. I have a lot of self-control.....

40. I am a hateful person.....

42. I am losing my mind.....

56. I am an important person to my friends and family.....

58. I am not loved by my family.....

60. I feel that my family doesn't trust me.....

74. I am popular with women.....

76. I am mad at the whole world.....

78. I am hard to be friendly with.....

92. Once in a while I think of things too bad to talk about.....

94. Sometimes, when I am not feeling well, I am cross.....

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

7. I am neither too fat nor too thin..... 7

9. I like my looks just the way they are..... 9

11. I would like to change some parts of my body..... 11

25. I am satisfied with my moral behavior..... 25

27. I am satisfied with my relationship to God..... 27

29. I ought to go to church more..... 29

43. I am satisfied to be just what I am..... 43

45. I am just as nice as I should be..... 45

47. I despise myself..... 47

61. I am satisfied with my family relationships..... 61

63. I understand my family as well as I should..... 63

65. I should trust my family more..... 65

79. I am as sociable as I want to be..... 79

81. I try to please others, but I don't overdo it..... 81

83. I am no good at all from a social standpoint..... 83

95. I do not like everyone I know..... 95

97. Once in a while, I laugh at a dirty joke..... 97

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

8. I am neither too tall nor too short.....

10. I don't feel as well as I should.....

12. I should have more sex appeal.....

26. I am as religious as I want to be.....

29. I wish I could be more trustworthy.....

30. I shouldn't tell so many lies.....

44. I am as smart as I want to be.....

46. I am not the person I would like to be.....

48. I wish I didn't give up as easily as I do.....

62. I treat my parents as well as I should (Use past tense if parents are not living).....

64. I am too sensitive to things my family say.....

66. I should love my family more.....

80. I am satisfied with the way I treat other people.....

82. I should be more polite to others.....

84. I ought to get along better with other people.....

96. I gossip a little at times.....

98. At times I feel like swearing.....

Responses –	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

		Item No.
13.	I take good care of myself physically	13
15.	I try to be careful about my appearance	15
17.	I often act like I am "all thumbs"	17
31.	I am true to my religion in my everyday life	31
33.	I try to change when I know I'm doing things that are wrong	33
35.	I sometimes do very bad things	35
49.	I can always take care of myself in any situation	49
51.	I take the blame for things without getting mad	51
53.	I do things without thinking about them first	53
67.	I try to play fair with my friends and family	67
69.	I take a real interest in my family	69
71.	I give in to my parents. (Use past tense if parents are not living)	71
85.	I try to understand the other fellow's point of view	85
87.	I get along well with other people	87
89.	I do not forgive others easily	89
99.	I would rather win than lose in a game	99

Responses -	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

Item No.

14. I feel good most of the time .....

16. I do poorly in sports and games .....

18. I am a poor sleeper .....

32. I do what is right most of the time .....

34. I sometimes use unfair means to get ahead .....

36. I have trouble doing the things that are right .....

50. I solve my problems quite easily .....

52. I change my mind a lot .....

54. I try to run away from my problems .....

68. I do my share of work at home .....

70. I quarrel with my family .....

72. I do not act like my family thinks I should .....

86. I see good points in all the people I meet .....

88. I do not feel at ease with other people .....

90. I find it hard to talk with strangers .....

100. Once in a while I put off until tomorrow what I ought to do today .....

Responses-	Completely false	Mostly false	Partly false and partly true	Mostly true	Completely true
	1	2	3	4	5

APPENDIX C: Raw Data

C.1

Remand Home Delinquents

Age Range 14 - 16

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total
1	15	7	8	8	7	268
2	13	6	7	9	4	316
3	12	6	6	6	6	261
4	14	9	5	9	5	272
5	19	9	10	11	8	310
6	13	6	7	8	5	282
7	21	10	11	8	13	301
8	16	9	7	11	5	254
9	12	6	6	6	6	289
10	21	11	10	12	9	300
11	18	11	7	10	8	286
12	21	11	10	9	12	356
13	14	6	8	9	5	344
14	20	9	11	11	9	310
15	18	8	10	9	9	277
16	16	6	10	8	8	343
17	19	9	10	7	12	339
18	20	10	10	11	9	282
19	13	6	7	7	6	280
20	14	8	6	9	5	295
21	17	8	9	11	6	308
22	14	8	6	9	5	323
23	14	5	9	7	7	283
24	14	4	10	8	6	229
25	17	9	8	8	9	304
26	17	9	8	10	7	317
27	17	9	8	8	9	302

C.2

Community Home Delinquents

Age Range 14 - 16.

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total
1	20	9	11	12	8	314
2	17	9	8	10	7	263
3	23	11	12	15	8	258
4	21	8	13	10	11	375
5	16	8	8	9	7	276
6	21	10	11	12	9	297
7	20	9	11	9	11	299
8	18	9	9	9	9	333
9	22	11	11	11	11	326
10	16	7	9	9	7	288
11	23	12	11	14	9	319
12	20	10	10	11	9	302
13	16	8	8	10	6	274
14	17	7	10	9	8	262
15	22	11	11	11	11	338
16	19	10	9	10	9	340
17	20	9	11	10	10	327
18	23	12	11	12	11	292
19	20	10	10	10	10	280
20	16	7	9	12	4	316
21	20	8	12	8	12	344
22	18	7	11	11	7	294
23	20	12	8	11	9	387
24	23	11	12	12	11	336

C.3

Borstal Boys

Age Range 17 - 21

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total
1	15	6	9	8	7	354
2	21	9	12	13	8	375
3	23	13	10	12	11	374
4	21	11	10	11	10	364
5	17	11	6	9	8	344
6	26	14	12	13	13	384
7	23	11	12	12	11	296
8	22	11	11	11	11	296
9	18	9	9	12	6	276
10	23	13	10	12	11	308
11	20	12	8	11	9	334
12	18	7	11	9	9	316
13	16	5	11	11	5	305
14	21	12	9	12	9	287
15	22	10	12	10	12	343
16	24	12	12	13	11	302
17	18	7	11	9	9	312
18	18	9	9	11	7	301
19	24	11	13	12	12	297
20	21	10	11	12	9	331
21	24	11	13	13	11	331
22	20	11	9	12	8	364
23	21	12	9	12	9	325
24	21	10	11	11	10	337
25	19	9	10	11	8	316
26	16	9	7	8	8	359
27	18	7	11	9	9	318
28	23	12	11	12	11	280
29	21	10	11	11	10	333
30	14	9	5	9	5	340
31	20	10	10	11	9	372
32	12	8	4	6	6	254
33	25	13	12	12	13	267
34	17	6	11	7	10	276
35	16	8	8	11	5	338
36	26	12	14	12	14	297
37	23	11	12	13	10	340
38	22	11	11	13	9	318
39	21	10	11	12	9	352

C.4

Borstal Girls

Age range 17 - 21

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total
1	23	11	12	13	10	302
*2	22	10	12	11	11	327
3	21	10	11	10	11	337
4	24	11	13	12	12	332
5	14	7	7	8	6	286
6	20	9	11	11	9	185
*7	18	10	8	9	9	342
*8	23	12	11	12	11	320
*9	14	8	6	8	6	337
10	20	10	10	10	10	338
*11	15	7	8	10	5	349
12	16	7	9	9	7	304
13	18	10	8	12	6	289
*14	23	10	13	12	11	330
15	17	9	8	10	7	342
*16	18	10	8	9	9	321
*17	24	13	11	12	12	243
18	22	11	11	13	9	331
19	20	9	11	11	9	345
20	15	9	6	8	7	269
21	25	11	14	13	12	308
22	19	9	10	10	9	289
23	21	11	10	12	9	298
24	20	11	9	11	9	298
25	22	11	11	12	10	316
26	16	8	8	8	8	286
*27	16	7	9	9	7	296
28	15	6	9	9	6	313
29	18	8	10	10	8	351
30	17	9	8	10	7	361
31	21	10	11	10	11	339
32	16	8	8	9	7	330
*33	19	9	10	12	7	281
34	16	7	9	9	7	315
35	20	10	10	12	8	344
*36	17	6	11	10	7	294
37	19	8	11	10	9	348

* Those who were in the "Younger Female Delinquents" cell for the Analysis of Variance Arrangements.

C.5

Younger Male Controls in Social Classes I & II

Age range 14 - 16

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	18	11	7	9	9	315
2	27	13	14	13	14	366
3	21	11	10	12	9	309
4	23	10	13	14	9	324
5	15	5	10	10	5	355
6	19	8	11	10	9	362
7	19	10	9	11	8	352
8	18	9	9	10	8	353
9	21	9	12	10	11	408
10	17	8	9	11	6	338
11	21	10	11	11	10	337
12	14	8	6	8	6	237

C.6

Older Male Controls in Social Classes I & II

Age range 17 - 18

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	17	7	10	12	5	287
2	23	10	13	11	12	337
3	20	7	13	12	8	335
4	21	10	11	12	9	384
5	15	9	6	10	5	313
6	23	10	13	11	12	328
7	15	7	8	8	7	299
8	17	9	8	8	11	320
9	23	12	11	13	10	352
10	19	7	12	10	9	357
11	21	9	12	11	10	346
12	20	10	10	10	10	352
13	23	11	12	12	11	414
14	20	9	11	12	8	326
15	18	9	9	12	6	356
16	18	8	10	12	6	372
17	24	12	12	13	11	340
18	19	9	10	9	10	372
19	24	12	12	12	12	386
20	22	10	12	11	11	356
21	27	14	13	14	13	396
22	17	7	10	11	6	395
23	15	7	8	9	6	391
24	20	10	10	13	7	353
25	17	8	9	10	7	303
26	21	11	10	14	7	362
27	24	12	12	13	11	357
28	23	10	13	14	9	378
29	25	11	14	12	13	364
30	18	5	13	11	7	329
31	20	10	10	10	10	272
32	20	11	9	10	10	406
33	20	10	10	10	10	402
34	22	9	13	10	12	340
35	23	10	13	13	10	351
36	15	6	9	10	5	293
37	21	9	12	12	9	335
38	25	10	15	13	12	398

C.7

Younger Male Controls in Social Classes III & IV

Age range 14 - 16

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	25	12	13	15	10	362
2	17	10	7	6	11	363
3	17	6	11	9	8	294
4	18	9	9	10	8	367
5	21	10	11	13	8	293
6	20	10	10	12	8	350
7	23	12	11	13	10	363
8	21	11	10	12	9	351
9	22	9	13	11	11	405
10	21	10	11	12	9	333
11	18	8	10	11	7	341
12	24	10	14	14	10	334
13	21	9	12	11	10	340
14	20	10	10	9	11	334
15	14	7	7	8	6	324
16	23	10	13	14	9	346
17	19	10	9	11	8	299
18	16	5	11	8	8	359
19	19	8	11	10	9	319
20	18	9	9	10	8	328
21	21	9	12	11	10	317
22	18	9	9	9	9	321
23	21	10	11	13	8	339
24	22	10	12	11	11	402
25	25	12	13	14	11	350
26	17	8	9	8	9	336
27	22	11	11	11	11	371
28	22	11	11	13	9	367
29	21	11	10	11	10	364
30	18	8	10	11	7	267
31	17	6	11	10	7	327

Older Male Controls in Social Classes III & IV

Age range 17 - 20

Subject Nos.	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	22	10	12	10	12	285
2	21	9	12	12	9	357
3	22	13	9	14	8	349
4	21	10	11	11	10	346
5	24	12	12	13	11	336
6	18	9	9	11	7	267
7	23	8	15	11	12	346
8	25	12	13	14	11	334
9	20	8	12	11	9	376
10	15	4	11	8	7	310
11	21	10	11	11	10	342
12	20	10	10	10	10	304
13	18	9	9	10	8	307
14	22	8	14	13	9	327
15	18	7	11	12	6	339
16	20	11	9	11	9	307
17	16	7	9	10	6	390
18	21	11	10	11	10	364
19	21	12	9	11	10	343
20	19	8	11	11	8	391
21	20	11	9	10	10	390
22	15	7	8	10	5	289
23	23	12	11	12	11	345
24	20	9	11	12	8	354
25	19	8	11	11	8	365
26	17	7	10	12	5	316
27	16	8	8	9	7	324
28	22	9	13	12	10	380
29	18	10	8	12	6	327
30	19	9	10	11	8	368
31	22	11	11	13	9	334
32	17	7	10	11	6	359
33	19	9	10	11	8	372
34	26	13	13	14	12	309
35	19	9	10	10	9	351
36	27	13	14	14	13	379
37	24	12	12	12	12	331
38	21	9	12	12	9	398
39	21	8	13	12	9	355
40	23	10	13	13	10	368

C.9

Younger Female Controls in Social Classes I & II

Age range 14 - 16

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	26	11	15	13	13	262
2	17	8	9	10	7	309
3	25	11	14	12	13	325
4	20	9	11	10	10	305
5	22	10	12	12	10	346
6	20	11	9	9	11	324
7	23	11	12	12	11	270
8	19	11	8	12	7	288
9	20	9	11	11	9	354
10	17	7	10	11	6	305
11	25	13	12	12	13	336
12	25	12	13	13	12	325
13	24	11	13	11	13	334
14	18	8	10	11	7	359
15	23	11	12	12	11	358
16	22	9	13	11	11	327
17	19	9	10	11	8	330
18	18	7	11	10	8	329
19	23	9	14	11	12	380
20	24	11	13	14	10	390
21	22	12	10	10	12	369
22	22	11	11	11	11	333
23	22	9	13	13	9	353
24	21	8	13	11	10	283
25	20	10	10	14	6	344
26	21	10	11	12	9	350
27	21	10	11	13	8	335
28	19	7	12	11	8	351
29	22	11	11	12	10	339
30	21	10	11	13	8	374
31	26	14	12	14	12	380
32	22	12	10	11	11	344
33	23	10	13	12	11	376
34	18	8	10	11	7	274
35	20	11	9	9	11	326
36	18	8	10	9	9	311
37	21	9	12	12	9	336

C.10

Older Females Controls in Social Classes I & II

Age range 17 - 19

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	18	8	10	9	9	327
2	23	10	13	13	10	356
3	17	8	9	11	6	310
4	22	11	11	11	11	329
5	20	8	12	11	9	288
6	22	10	12	12	10	352
7	24	9	15	13	11	288
8	25	12	13	14	11	331
9	23	11	12	12	11	323
10	16	8	8	9	7	309
11	21	9	12	13	8	366
12	22	10	12	13	9	358
13	21	8	13	12	9	328
14	22	10	12	13	9	333
15	19	9	10	11	8	275
16	23	11	12	11	12	252
17	23	12	11	13	10	310
18	21	9	12	11	10	372
19	23	11	12	14	9	326
20	23	9	14	13	10	311
21	22	9	13	12	10	330
22	22	10	12	11	11	339

C.11

Younger Female Controls in Social Classes III & IV

All aged 15.

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	22	11	11	12	10	327
2	24	12	12	13	11	381
3	22	10	12	12	10	316
4	20	9	11	11	9	347
5	21	10	11	12	9	349
6	23	12	11	12	11	326
7	20	9	11	10	10	318
8	18	8	10	10	8	323
9	23	14	9	11	12	311
10	18	10	8	11	7	352
11	21	11	10	11	10	359
12	18	8	10	11	7	348
13	26	13	13	13	13	370
14	21	11	10	11	10	377
15	18	10	8	10	8	292
16	20	10	10	13	7	330
17	23	11	12	11	12	354
18	17	9	8	9	8	321
19	22	10	12	11	11	347
20	17	10	7	11	6	340
21	21	11	10	12	9	392
22	20	12	8	11	9	321
23	21	12	9	12	9	327
24	21	11	10	12	9	305

Older Female Controls in Social Classes III & IV

All aged 17.

Subject Nos	C.A.S.C. Scores					Self-Concept Scores
	Total	Positive	Negative	Odd	Even	Total.
1	20	7	13	11	9	351
2	22	10	12	12	10	268
3	22	10	12	13	9	289
4	19	9	10	10	9	261

C.13: Means and Standard Deviations for the C.A.S.C. and the T.S.C.S.

Subject Groupings	The C.A.S.C.		The T.S.C.S.	
	Means	SD	Means	SD
1 Remand Home Subjects	16.26	2.9	297.44	29.30
2. Community Home Subjects	19.63	2.41	310.00	34.18
3 Borstal Boys	20.26	3.32	323.49	32.48
4a Older Borstan Girls	19.04	2.93	313.69	35.92
b "Younger" Borstal Girls	19.00	3.49	312.72	31.44
5 Younger Male Controls in Classes I & II	19.42	3.53	338.00	41.27
6. Older Male Controls in Classes I & II	20.39	3.11	351.50	35.04
7 Younger Males Controls in Classes III & IV	20.03	2.69	340.84	29.82
8 Older Male Controls in Classes III & IV	20.38	2.83	343.35	31.11
9 Younger Female Controls in Classes I & II	21.32	2.47	336.05	30.52
10 Older Female Controls in Classes I & II	21.45	2.24	323.32	29.63
11 Younger Female Controls in Classes III & IV	20.71	2.27	338.88	25.23
12 Older Female Controls in Classes III & IV	20.75	1.50	292.25	40.73

C.14: Data for Chi Square Tests Experimental Subjects.

	Rem. Home Subjects		Comm. Home Subjects		Borstal Boys		Borstal Girls	
Items	I	E	I	E	I	E	I	E
1	23	4	20	4	33	6	21(9)	5(2)
2	18	9	12	12	13	26	13(8)	13(3)
3	22	5	24	0	37	2	25(10)	1(1)
4	4	22	7	17	4	35	8(3)	18(8)
5	21	5	23	1	36	3	20(10)	6(1)
6	13	12	12	11	30	9	19(7)	7(4)
7	4	22	9	15	9	30	4(1)	22(10)
8	18	8	18	6	28	11	17(8)	9(3)
9	11	16	15	9	23	16	16(7)	10(4)
10	12	14	15	8	32	6	19(9)	7(2)
11	15	12	18	6	33	6	21(9)	5(2)
12	17	9	17	7	28	11	17(8)	9(3)
13	12	15	13	11	21	18	15(8)	10(3)
14	16	10	17	7	29	10	17(9)	9(2)
15	15	12	13	11	20	19	11(5)	15(6)
16	16	11	10	14	28	11	11(4)	15(7)
17	20	7	21	3	29	10	19(9)	7(2)
18	15	12	19	5	21	18	20)6)	6(5)
19	18	9	17	7	38	1	25(8)	1(3)
20	10	17	18	6	22	17	8(3)	18(8)
21	16	10	16	7	31	8	20(10)	6(1)
22	11	16	12	12	19	20	9(6)	17(4)
23	18	8	16	7	31	8	23(8)	3(2)
24	19	8	16	8	30	9	22(9)	4(2)
25	9	18	9	15	16	23	7(2)	19(9)
26	7	19	17	7	33	5	24(8)	2(3)
27	19	7	21	3	36	3	22(10)	4(1)
28	8	19	8	14	18	21	6(3)	20(8)
29	18	9	22	2	35	3	24(9)	2(2)
30	15	12	15	9	28	10	11(4)	15(7)

NB: Data in brackets are for the 11 "younger females."

C.15: Data for Chi Square Tests

Male Controls

	Younger Males I & II		Older Males I & II		Younger Males III & IV		Older Males III & IV	
Items	I	E	I	E	I	E	I	E
1	7	2	35	3	26	4	33	7
2	3	9	17	21	7	24	20	20
3	11	1	33	5	29	2	38	2
4	3	9	7	31	4	27	6	34
5	12	0	36	2	31	0	37	3
6	6	5	21	16	16	14	23	17
7	5	7	8	30	10	21	9	31
8	6	6	16	22	20	11	21	18
9	7	5	18	20	15	16	20	19
10	22	1	33	5	31	0	34	5
11	7	5	35	3	20	11	35	5
12	11	1	31	7	28	3	34	6
13	9	3	25	13	19	12	30	10
14	10	1	28	10	26	5	31	9
15	6	6	24	14	17	14	23	17
16	6	6	29	9	14	17	29	11
17	10	2	34	3	28	3	37	3
18	10	2	25	13	20	11	29	11
19	12	0	36	2	28	3	39	1
20	7	5	22	16	18	13	22	18
21	11	1	30	8	25	6	31	9
22	5	7	25	13	13	18	20	20
23	9	3	34	3	24	7	37	3
24	7	5	29	9	26	5	27	13
25	3	9	13	24	11	20	13	27
26	7	5	29	9	24	7	32	7
27	10	1	37	1	30	1	39	1
28	4	8	13	25	9	22	13	26
29	11	1	36	2	28	3	37	3
30	7	5	18	20	23	8	16	23

C.16: Data for Chi Square Tests
Female Controls

Items	Younger Females in I & II		Older Females in I & II		Younger Females in III & IV		Older Females in III & IV	
	I	E	I	E	I	E	I	E
1	34	3	18	3	20	3	1	3
2	15	21	10	12	13	11	2	2
3	35	2	21	1	24	0	4	0
4	16	21	9	13	9	15	0	4
5	37	0	21	1	23	1	4	0
6	24	13	13	9	20	4	0	4
7	10	27	3	19	2	22	1	3
8	28	9	13	8	16	7	2	2
9	17	20	16	6	17	7	2	2
10	31	6	20	2	23	1	4	0
11	31	4	21	1	23	1	4	0
12	33	4	21	1	14	10	4	0
13	34	3	20	2	21	3	2	2
14	35	2	19	3	15	9	3	1
15	18	19	14	8	14	10	3	1
16	29	8	18	4	16	8	4	0
17	32	5	21	1	18	6	4	0
18	22	15	14	8	10	13	3	1
19	35	2	21	1	21	3	4	0
20	22	15	10	12	18	6	2	2
21	30	7	16	6	21	2	4	0
22	23	14	15	7	11	12	4	0
23	34	2	20	2	20	4	4	0
24	31	6	15	7	19	5	4	0
25	12	25	9	13	5	19	1	3
26	31	5	20	2	22	2	4	0
27	34	3	22	0	23	1	4	0
28	7	30	7	15	10	14	0	4
29	35	2	19	2	20	4	4	0
30	14	23	6	16	10	14	1	3

C.17: Means and Standard Deviations of Social Desirability Scores used in the two attempts at validating the C.A.S.C.

First Attempt			Second Attempt		
Subjects All Males	Ages	Raw Data	Subjects Males	Ages	Raw Data
1	12	35	1	10	16
2	12	14	2	11	19
3	12	13	3	11	24
4	12	15	4	11	20
5	12	21	5	11	20
6	12	15	6	11	26
7	12	20	7	12	5
8	12	21	8	12	15
9	12	18	9	12	21
10	12	21	10	12	29
11	12	24	11	12	11
12	12	10	12	13	26
13	12	21	13	13	27
14	11	21	14	13	33
15	12	41	15	13	13
16	12	11	16	13	21
17	12	18	17	14	1
18	12	37	18	14	26
19	13	14	19	14	18
20	13	9	20	14	14
21	13	5	21	14	22
22	13	18	22	14	17
23	13	7	23	15	19
24	13	8	24	15	21
25	13	11	25	16	15
26	13	16	26	18	21
27	13	4	27	18	18
28	13	9			M=19.19
29	13	16			SD=6.93
30	13	39			
31	13	16	Females		
32	13	33	1	11	20
33	13	16	2	12	25
34	13	14	3	12	20
35	13	15	4	12	28
36	12	28	5	12	9
37	13	18	6	12	24
38	14	4	7	12	21
39	14	8	8	13	25
40	14	12	9	13	24
41	14	12	10	13	15

First Attempt contd.		
42	14	2
43	14	5
44	13	4
45	14	22
46	14	15
47	14	10
48	14	22
49	14	16
50	14	11
51	14	10
52	14	11
53	14	11
54	14	28
55	14	10
56	15	12
57	14	12
58	14	19
		M=16.00
		SD=8.76

Second Attempt Contd.		
11	13	28
12	14	28
13	14	20
14	14	16
15	15	12
16	15	7
17	15	1
18	16	13
19	17	8
		M=18.11
		SD=8.01

APPENDIX D: Demographic Data of Subjects in the substantive study

Remand Home Subjects			Community Home Subjects		
Nos.	Age	Birth Order	Nos.	Age	Birth Order
1	15	LB	1	15	LB
2	16	LB	2	16	LB
3	14	LB	3	16	LB
4	16	LB	4	16	LB
5	15	LB	5	15	LB
6	14	NP	6	15	LB
7	14	LB	7	15	FB
8	14	FB	8	16	LB
9	15	NP	1	15	LB
10	14	LB	10	16	LB
11	14	NP	11	16	FB
12	14	LB	12	16	LB
13	15	only	13	15	LB
14	15	LB	14	16	LB
15	15	LB	15	15	LB
16	14	FB	16	14	LB
17	14	LB	17	14	LB
18	16	NP	18	15	LB
19	15	FB	19	15	LB
20	15	LB	20	16	LB
21	14	LB	21	15	LB
22	15	LB	22	15	FB
23	14	LB	23	15	LB
24	15	LB	24	15	LB
25	15	LB			
26	15	LB			
27	15	FB			

NB. LB = Later Born
FB = First Born
ONLY = Only Child
NP = (Information) Not Provided

Borstal Boys			Borstal Girls		
Nos.:	Age	Birth Order	Nos	Age	Birth Order
1	21	LB	1	19	LB
2	21	LB	*2	16	FB
3	20	LB	3	18	LB
4	17	LB	4	18	LB
5	19	LB	5	18	LB
6	18	LB	6	19	LB
7	20	LB	*7	16	LB
8	17	LB	*8	16	LB
9	20	LB	*9	16	LB
10	18	FB	10	19	LB
11	18	FB	*11	16	LB
12	19	LB	12	19	LB
13	20	FB	13	20	LB
14	19	LB	*14	16	LB
15	17	FB	15	17	LB
16	18	FB	*16	16	FB
17	20	LB	*17	16	LB
18	21	LB	18	20	LB
19	19	FB	19	19	NP
20	19	LB	20	18	LB
21	21	FB	21	17	FB
22	19	LB	22	18	LB
23	21	LB	23	19	Only
24	21	LB	24	18	LB
25	20	LB	25	18	LB
26	18	LB	26	19	LB
27	19	FB	*27	16	LB
28	19	LB	28	18	LB
29	21	FB	29	19	LB
30	18	LB	30	17	LB
31	21	LB	31	17	LB
32	17	LB	32	19	LB
33	17	Only	*33	16	FB
34	17	LB	34	18	LB
35	20	LB	35	18	LB
36	20	FB	*36	16	LB
37	18	FB	37	21	LB
38	21	LB			
39	20	LB			

*Those who were in the "Younger Female Delinquent" cell for the Analysis of variance arrangements.

Younger Male Controls in Classes I & II

Nos.	Age	Birth Order
1	15	LB
2	16	LB
3	15	LB
4	16	FB
5	16	FB
6	15	LB
7	15	Only
8	14	LB
9	15	LB
10	15	LB
11	14	FB
12	15	LB

Older Male Contols in Classes I & II

Nos	Age	Birth Order
1	17	FB
2	18	LB
3	17	LB
4	18	Only
5	17	LB
6	17	FB
7	17	FB
8	17	LB
9	18	FB
10	17	LB
11	17	LB
12	17	Only
13	17	LB
14	18	LB
15	18	FB
16	17	LB
17	18	LB
18	18	LB
19	18	LB
20	17	LB
21	18	FB
22	18	Only
23	17	LB
24	17	LB
25	18	FB
26	18	FB
27	17	FB
28	18	FB
29	17	Only
30	17	LB
31	18	LB
32	18	FB
33	18	FB
34	17	FB
35	17	Only
36	17	LB
37	17	FB
38	17	FB

Younger Male Contols in Classes III & IV

Nos.:	Age	Birth Order
1	14	FB
2	15	FB
3	14	FB
4	15	LB
5	14	FB
6	15	FB
7	15	LB
8	14	Only
9	16	LB
10	16	FB
11	16	LB
12	14	LB
13	15	FB
14	15	FB
15	15	LB
16	16	Only
17	15	LB
18	15	LB
19	15	FB
20	15	LB
21	15	FB
22	15	LB
23	14	FB
24	16	LB
25	15	FB
26	15	LB
27	15	FB
28	15	Only
29	15	LB
30	15	LB
31	16	FB

Older Male Controls in Classes III & IV

Nos.:	Age	Birth Order
1	17	LB
2	17	LB
3	17	LB
4	18	LB
5	17	LB
6	17	LB
7	17	NP
8	17	LB
9	17	NP
10	17	FB
11	17	LB
12	17	LB
13	18	LB
14	17	FB
15	20	LB
16	18	FB
17	18	LB
18	18	LB
19	17	LB
20	18	FB
21	18	LB
22	17	FB
23	17	fB
24	17	FB
25	17	LB
26	17	LB
27	17	Only
28	17	LB
29	18	LB
30	18	LB
31	17	LB
32	18	FB
33	17	LB
34	18	FB
35	17	Only
36	18	LB
37	17	LB
38	17	LB
39	17	LB
40	17	LB

Younger Female Controls in Classes I & II

Nos.:	Age	Birth Order
1	14	LB
2	14	FB
3	14	LB
4	14	Only
5	14	LB
6	14	FB
7	14	LB
8	14	Only
9	14	FB
10	14	LB
11	14	FB
12	14	LB
13	14	Only
14	14	Only
15	14	LB
16	14	LB
17	14	LB
18	15	LB
19	14	LB
20	14	FB
21	15	FB
22	16	LB
23	16	LB
24	16	FB
25	16	LB
26	16	LB
27	16	LB
28	16	LB
29	14	LB
30	14	Only
31	14	FB
32	14	FB
33	14	FB
34	14	LB
35	16	LB
36	16	FB
37	16	LB

Older Female Controls in Classes I & II

Nos.	Age	Birth Order
1	17	Only
2	19	FB
3	17	LB
4	17	FB
5	17	FB
6	17	LB
7	17	FB
8	17	FB
9	17	FB
10	17	FB
11	17	LB
12	17	FB
13	17	LB
14	18	FB
15	17	LB
16	17	LB
17	17	Only
18	18	FB
19	17	FB
20	17	NP
21	17	NP
22	17	NP

Fem

Younger Female Controls in Classes III & IV

Nos.:	Age	Birth Order
1	15	LB
2	15	LB
3	15	FB
4	15	LB
5	15	FB
6	15	LB
7	15	FB
8	15	LB
9	15	LB
10	15	LB
11	15	LB
12	15	NP
13	15	LB
14	15	FB
15	15	Only
16	15	LB
17	15	LB
18	15	FB
19	15	FB
20	15	LB
21	15	LB
22	15	FB
23	15	LB
24	15	LB

Older Female Controls in Classes III & IV

Nos.	Age	Birth Order
1	17	Only
2	17	LB
3	17	LB
4	17	LB